

Department of Aerospace Engineering & Mechanics

BSAE Program – 124 credit hours

FRESHMAN YEAR

Fall
15 credit hours

placement	MATH 125 Calculus I MATH 4	AEM 201 AEM 249 MATH 126 PH 105

placement	CH 101 Chemistry NS 4	

HU/L/FA Elective HU/L/FA 3 (see note 2)		

	AEM 121 Intro to Aerospace ES 1 (see note 3) [Fall Only]	
MATH 125		

placement or EN 099	EN 101 English Comp I FC 3	EN 102

Spring
17 credit hours

MATH 125	MATH 126 Calculus II MATH 4	AEM 250 AEM 264 PH 106 MATH 227 MATH 237 Math 238 ME 215

MATH 125	PH 105 Physics I NS 4	PH 106 AEM 201

	ENGR 103 Engineering Foundations ENGR 3	AEM 201
MATH 125		

EN 101	EN 102 English Comp II FC 3	

	AEM 249 Algorithm Devl Implementation ES 3 (see note 1)	AEM 341 AEM 368 AEM 468
MATH 125		

SOPHOMORE YEAR

Fall
15 credit hours

MATH 126	MATH 227 Calculus III MATH 4	AEM 311 MATH 238 AEM 461

MATH 126 PH 105	PH 106 Physics II NS 4	

PH 105 (or 125) MATH 125 (or 145) ENGR 103 (or 123) OR MATH 126 (or 146) PH 105 (or 125)	AEM 201 Statics ES 3	AEM 250 AEM 264 AEM 311

MATH 112 or higher.	ENGR 161 Small-Scale Engr Graphics ENGR 1 (see note 4)	

MATH 126	MATH 237 Intro to Linear Algebra MATH/C 3	AEM 368

Spring
16 credit hours

MATH 126	MATH 238 App. Differential Equations I MATH/C 3	AEM 313 AEM 360 AEM 368 ME 349 AEM 420

AEM 201 MATH 126	AEM 250/251 Mechanics of Materials I/Lab ES 3/1	AEM 341

AEM 201 MATH 126	AEM 264 Dynamics ES 3	AEM 313 AEM 368

AEM 201 MATH 227	AEM 311 Fluid Mechanics ES 3	AEM 313 AEM 360 AEM 368 AEM 413 AEM 420

HI/SB Elective HI/SB 3 (see note 2)		

Legend	
C	Computer Requirement
ES	Engineering Science
FC	Freshman Composition
HI/SB	History/Social & Behavioral Sciences
HU/L/FA	Humanities/Literature/Fine Arts
MATH	Mathematics
NS	Natural Science Requirement
W	Writing Requirement

Key		
Pre-requisites	Course # Title	Downward Dependencies
Co-requisites	Area & Credits	

Refer to Department website for Course Rotation Schedule.

Go to <https://catalog.ua.edu/> for information on pre- and co-requisites.

Notes:

1. A student may substitute CS 100 (4 semester hours) or RRS 101&102 for AEM 249
2. For more information, consult:
<http://registrar.ua.edu/core-curriculum>
All students must complete a sequence of two of the HI/SB or HU/L/FA elective courses from the same department.
3. AEM 121 is recommended, but can be satisfied by taking ENGR 111 or other engineering intro courses.
4. ENGR-161 is recommended, but can be satisfied by taking ENGR-171 (10-3-18 AEM dept meeting)

This is an unofficial flow chart prepared to assist students in planning their coursework. The UA Undergraduate Catalog contains the official listing of academic information.

Aerospace Engineering & Mechanics and other departments change their pre-requisites & co-requisites from time to time. Students should consult the UA Undergraduate Catalog and seek advising prior to registering for courses.

Dr. Weihua Su
Aerospace Engineering & Mechanics

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Department of Aerospace Engineering & Mechanics

BSAE Program – 124 credit hours

JUNIOR YEAR

Fall
16 credit hours

AEM 264 AEM 311	AEM 313 Aerodynamics ES 3	AEM 402
MATH 238		

AEM 249, or see note 1 in previous page AEM 250	AEM 341/351 Aircraft Structures/ Aerospace Structures Laboratory	AEM 402 AEM 451 AEM 461
	ES 3/1	

AEM 311 MATH 238	AEM 360 Astronautics ES 3 [Fall Only]	AEM 402

MATH 126	ME 215 Thermodynamics ES 3	AEM 413

HU/L/FA Elective HU/L/FA 3 (see note 2)
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Spring
15 credit hours

AEM 249, or see note 1 in previous page AEM 264 AEM 311 MATH 238	AEM 368 Flight Mechanics ES 3 [Spring Only]	AEM 402 AEM 468

ME 215 AEM 311	AEM 413 Compressible Flow ES 3 [Spring Only]	AEM 402 AEM 408

MATH 238	ME 349 Applied Numerical Methods ES/C 3	AEM 420 AEM 461 AEM 468

HI/SB Elective HI/SB 3 (see note 2)
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HU/L/FA Elective HU/L/FA 3 (see note 2)
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SENIOR YEAR

Fall
15 credit hours

AEM 313 AEM 341 AEM 360 AEM 368 AEM 413 (or 513) AEM 408 (or 508)	AEM 402 Aerospace Design I ES/W 3 [Fall Only]	AEM 404

AEM 413	AEM 408 Propulsion ES 3 [Fall Only]	

MATH 237 ME 349 AEM 368 AEM 249, or see note 1 in previous page	AEM 468 Flight Dynamics & Control ES 3 [Fall Only]	

	AEM 495 Senior Seminar ES/W 3 [Fall Only]	
AEM 402		

variable	AEM Comput. Elective (see below) ES/C 3	
variable		

Spring
15 credit hours

AEM 402	AEM 404 Aerospace Design II ES 3 [Spring Only]	

AEM 341	AEM 451 Aircraft Structural Design ES -3 [Spring Only]	

	AEM Elective ES 3	

variable	Engineering Elective (see below) ES 3	
variable		

HI/SB Elective HI/SB 3 (see note 2)
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Legend	
C	Computer Requirement
ES	Engineering Science
FC	Freshman Composition
HI/SB	History/Social & Behavioral Sciences
HU/L/FA	Humanities/Literature/Fine Arts
MATH	Mathematics
NS	Natural Science Requirement
W	Writing Requirement

Key		
Pre-requisites	Course # Title Area & Credits	Downward Dependencies
Co-requisites		

Engineering Elective (choose one): <ul style="list-style-type: none"> Any 400-level, 3-hour AEM elective, any 300- or 400-level, 3-hour College of Engineering course, or MTE 271. AEM Computational Elective (choose one): <ul style="list-style-type: none"> AEM 420 Computational Fluid Dynamics (Prerequisites: ME 349, AEM 311 and MATH 238) AEM 461 Computational Aerospace Structures (Prerequisites: MATH 227 or MATH 247, AEM 341 and ME 349)

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