Department of Aerospace Engineering & Mechanics

BSAE Program – 125 credit hours | Version A: ENGR 103 in the Fall Semester

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	
MATH 125	**ENGR 103** Engineering Foundations ENGR 3	AEM 201 ENGR 161
MATH 125	**AEM 121** Intro to Aerospace ES 1	
placement or EN 099	**EN 101** English Comp I FC 3	EN 102

Spring
15 credit hours

MATH 125	**MATH 126** Calculus II MATH 4	AEM 250 AEM 264 PH 106 MATH 227 MATH 237 ME 215
MATH 125	**PH 105** Physics I NS 4	PH 106 AEM 201
placement or MATH 100	**EC 110** Microeconomics SB 3	
EN 101	**EN 102** English Comp II FC 3	
ENGR 103	**ENGR 161** Small-Scale Engr Graphics ENGR 1	

SOPHOMORE YEAR

Fall
16 credit hours

MATH 126	**MATH 227** Calculus III MATH 4	AEM 311 MATH 238
MATH 126 PH 105	**PH 106** Physics II NS 4	
PH 105 MATH 125 ENGR 103	**AEM 201** Statics ES 3	AEM 250 AEM 264 AEM 311
MATH 125	**AEM 249** C++/Algorithms ES 2 (see note 1)	AEM 341 AEM 349 AEM 368
MATH 126 MATH 227	**MATH 237** Intro to Linear Algebra MATH 3	AEM 349 AEM 368

Spring
16 credit hours

MATH 227	**MATH 238** App. Differential Equations I MATH 3	AEM 313 AEM 349 AEM 360 AEM 368
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
	HU/L/FA Elective HU/L/FA 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 Co-requisites	**Course #** Title Area & Credits	Downward Dependencies

Notes:

1. A student may substitute CS 100 (4 semester hours) or CBH 101/102 (8 semester hours) for AEM 249.
2. For more information, consult: http://registrar.ua.edu/core-curriculum

Go to http://aem.eng.ua.edu/wp-content/uploads/sites/2/2016/07/AEM-4-YEAR-COURSE-ROTATION-2016_04.pdf for information on course rotations.

Go to http://courseleaf.ua.edu/engineering for information on pre- and co-requisites.

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. John Baker, Department Head
Aerospace Engineering & Mechanics

version: 08_31_2016

Department of Aerospace Engineering & Mechanics

BSAE Program – 125 credit hours | Version A: ENGR 103 in the Fall Semester

JUNIOR YEAR

Fall
16 credit hours

AEM 264 AEM 311 MATH 238	**AEM 313** Aerodynamics ES 3 [Fall Only]	AEM 402
AEM 249 AEM 250	**AEM 341** Aircraft Structures ES 3 [Fall Only]	AEM 402 AEM 451
AEM 249 MATH 237 MATH 238	**AEM 349** Engineering Analysis ES/C 4 [Fall Only]	AEM 420 AEM 461
MATH 126	**ME 215** Thermodynamics ES 3	AEM 413
HU/L/FA Elective HU/L/FA 3 (see note 2)		

Spring
16 credit hours

AEM 249 AEM 264 MATH 237 MATH 238	**AEM 368** Flight Dynamics & Control I ES 4 [Spring Only]	AEM 402 AEM 468
ME 215 AEM 311	**AEM 413** Compressible Flow ES 3 [Spring Only]	AEM 402 AEM 408
AEM 311 MATH 238	**AEM 360** Astronautics ES 3 [Spring Only]	
variable variable	**Engineering Elective** (see below) ES 3	
HI/SB Elective HI/SB 3 (see note 2)		

SENIOR YEAR

Fall
15 credit hours

AEM 313 AEM 341 AEM 368 AEM 413 AEM 408 AEM 495	**AEM 402** Aerospace Design I ES 3 [Fall Only]	AEM 404
AEM 413 AEM 402	**AEM 408** Propulsion ES 3 [Fall Only]	
AEM 368	**AEM 468** Flight Dynamics & Control II ES 4 [Fall Only]	
AEM 402	**AEM 495** Senior Seminar ES/W 2 [Fall Only]	
variable variable	**AEM Comput. Elective** (see below) ES/C 3	

Spring
16 credit hours

AEM 402	**AEM 404** Aerospace Design II ES 3 [Spring Only]	
AEM 341	**AEM 451** Structural Design & Testing ES/W 4 [Spring Only]	
	AEM Elective ES 3	
HI/SB Elective HI/SB 3 (see note 2)		
HU/L/FA Elective HU/L/FA 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 Co-requisites	**Course #** Title Area & Credits	Downward Dependencies

Engineering Elective (choose one):
- Any 400-level AEM elective course
- ECE 320 Fundamentals of Electrical Engineering
- ECE 340 Electromagnetics
- ECE 380 Digital Logic
- ME 305 Thermodynamics II
- ME 309 Heat Transfer
- ME 350 Static Machine Components
- MTE 271 Engineering Materials

AEM Computational Elective (choose one):
- AEM 420 Computational Fluid Dynamics
- AEM 461 Computational Aerospace Structures

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. John Baker, Department Head
Aerospace Engineering & Mechanics

version: 08_31_2016

Department of Aerospace Engineering & Mechanics

BSAE Program – 125 credit hours | Version B: ENGR 103 in the Spring Semester

FRESHMAN YEAR

Fall
16 credit hours

placement	**MATH 125** Calculus I MATH 4	AEM 201 AEM 249 MATH 126 PH 105
placement	**CH 101** Chemistry NS 4	
placement or MATH 100	**EC 110** Microeconomics SB 3	
MATH 125	**AEM 121** Intro to Aerospace ES 1	
placement or EN 099	**EN 101** English Comp I FC 3	EN 102

Spring
16 credit hours

MATH 125	**MATH 126** Calculus II MATH 4	AEM 250 AEM 264 PH 106 MATH 227 MATH 237 ME 215
MATH 125	**PH 105** Physics I NS 4	PH 106 AEM 201
MATH 125	**ENGR 103** Engineering Foundations ENGR 3	AEM 201 ENGR 161
EN 101	**EN 102** English Comp II FC 3	
MATH 125	**AEM 249** C++/Algorithms ES 2 (see note 1)	AEM 341 AEM 349 AEM 368

SOPHOMORE YEAR

Fall
15 credit hours

MATH 126	**MATH 227** Calculus III MATH 4	AEM 311 MATH 238
MATH 126 PH 105	**PH 106** Physics II NS 4	
PH 105 MATH 125 ENGR 103	**AEM 201** Statics ES 3	AEM 250 AEM 264 AEM 311
ENGR 103	**ENGR 161** Small-Scale Engr Graphics ENGR 1	
MATH 126 MATH 227	**MATH 237** Intro to Linear Algebra MATH 3	AEM 349 AEM 368

Spring
16 credit hours

MATH 227	**MATH 238** App. Differential Equations I MATH 3	AEM 313 AEM 349 AEM 360 AEM 368
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
	HU/L/FA Elective HU/L/FA 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 Co-requisites	**Course #** Title Area & Credits	Downward Dependencies

Notes:

1. A student may substitute CS 100 (4 semester hours) or CBH 101/102 (8 semester hours) for AEM 249.
2. For more information, consult: http://registrar.ua.edu/core-curriculum

Go to http://aem.eng.ua.edu/wp-content/uploads/sites/2/2016/07/AEM-4-YEAR-COURSE-ROTATION-2016_04.pdf for information on course rotations.

Go to http://courseleaf.ua.edu/engineering for information on pre- and co-requisites.

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. John Baker, Department Head
Aerospace Engineering & Mechanics

version: 08_31_2016

Department of Aerospace Engineering & Mechanics

BSAE Program – 125 credit hours | Version B: ENGR 103 in the Spring Semester

JUNIOR YEAR

Fall
16 credit hours

AEM 264 AEM 311 MATH 238	**AEM 313** Aerodynamics ES 3 [Fall Only]	AEM 402
AEM 249 AEM 250	**AEM 341** Aircraft Structures ES 3 [Fall Only]	AEM 402 AEM 451
AEM 249 MATH 237 MATH 238	**AEM 349** Engineering Analysis ES/C 4 [Fall Only]	AEM 420 AEM 461
MATH 126	**ME 215** Thermodynamics ES 3	AEM 413
HU/L/FA Elective HU/L/FA 3 (see note 2)		

Spring
16 credit hours

AEM 249 AEM 264 MATH 237 MATH 238	**AEM 368** Flight Dynamics & Control I ES 4 [Spring Only]	AEM 402 AEM 468
ME 215 AEM 311	**AEM 413** Compressible Flow ES 3 [Spring Only]	AEM 402 AEM 408
AEM 311 MATH 238	**AEM 360** Astronautics ES 3 [Spring Only]	
variable variable	**Engineering Elective** (see below) ES 3	
HI/SB Elective HI/SB 3 (see note 2)		

SENIOR YEAR

Fall
15 credit hours

AEM 313 AEM 341 AEM 368 AEM 413 AEM 408 AEM 495	**AEM 402** Aerospace Design I ES 3 [Fall Only]	AEM 404
AEM 413 AEM 402	**AEM 408** Propulsion ES 3 [Fall Only]	
AEM 368	**AEM 468** Flight Dynamics & Control II ES 4 [Fall Only]	
AEM 402	**AEM 495** Senior Seminar ES/W 2 [Fall Only]	
variable variable	**AEM Comput. Elective** (see below) ES/C 3	

Spring
16 credit hours

AEM 402	**AEM 404** Aerospace Design II ES 3 [Spring Only]	
AEM 341	**AEM 451** Structural Design & Testing ES/W 4 [Spring Only]	
	AEM Elective ES 3	
HI/SB Elective HI/SB 3 (see note 2)		
HU/L/FA Elective HU/L/FA 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 Co-requisites	**Course #** Title Area & Credits	Downward Dependencies

Engineering Elective (choose one):
- Any 400-level AEM elective course
- ECE 320 Fundamentals of Electrical Engineering
- ECE 340 Electromagnetics
- ECE 380 Digital Logic
- ME 305 Thermodynamics II
- ME 309 Heat Transfer
- ME 350 Static Machine Components
- MTE 271 Engineering Materials

AEM Computational Elective (choose one):
- AEM 420 Computational Fluid Dynamics
- AEM 461 Computational Aerospace Structures

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. John Baker, Department Head
Aerospace Engineering & Mechanics

version: 08_31_2016