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

- **Spring:** 15 credit hours
  - Placement
  - **MATH 126** Calculus II MATH 4
  - **PH 105** Physics I NS 4

- **Sophomore Year**

- **Fall:** 16 credit hours
  - **MATH 126**
  - **AEM 201**
  - **ENGR 103** Engineering Foundations ENGR 3

- **Spring:** 16 credit hours
  - **MATH 227** Calculus III MATH 4
  - **PH 106** Physics II NS 4

**Placement**

- **CH 101** Chemistry NS 4
- **ENGR 103** Engineering Foundations ENGR 3
- **MATH 125**
- **MATH 126**
- **PH 105**
- **PH 106**
- **ENGR 103** Engineering Foundations ENGR 3
- **EN 101** English Comp II FC 3
- **ENGR 161** Small-Scale Engr Graphics ENGR 1
- **MATH 125**
- **AEM 201**
- **MATH 227**

**Legend**

- C: Computer Requirement
- ES: Engineering Science
- FC: Freshman Composition
- HI/SA: 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

**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

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

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Dr. John Baker, Department Head
Aerospace Engineering & Mechanics

version: 01_21_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

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>AEM 264</td>
<td>Aerodynamics</td>
<td>ES 3 (Fall Only)</td>
</tr>
<tr>
<td>AEM 313</td>
<td>Flight Dynamics &amp; Control I</td>
<td>ES 4 (Spring Only)</td>
</tr>
<tr>
<td>AEM 402</td>
<td>Aerospace Design I</td>
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</tr>
<tr>
<td>AEM 404</td>
<td>Aerospace Design II</td>
<td>ES 3 (Spring Only)</td>
</tr>
<tr>
<td>AEM 413</td>
<td>Compressible Flow</td>
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<td>AEM 418</td>
<td>Propulsion</td>
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<td>Flight Dynamics &amp; Control II</td>
<td>ES 4 (Fall Only)</td>
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<tr>
<td>AEM 495</td>
<td>Senior Seminar</td>
<td>ES/W 2 (Fall Only)</td>
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### Spring

16 credit hours

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<tbody>
<tr>
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<td>Aircraft Structures</td>
<td>ES 3 (Fall Only)</td>
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<tr>
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<td>Astronautics</td>
<td>ES 3 (Spring Only)</td>
</tr>
<tr>
<td>AEM 317</td>
<td>Aerospace Design I</td>
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</tr>
<tr>
<td>AEM 341</td>
<td>Structural Design &amp; Testing</td>
<td>ES/W 4 (Spring Only)</td>
</tr>
<tr>
<td>AEM 349</td>
<td>Engineering Analysis</td>
<td>ES/C 4 (Fall Only)</td>
</tr>
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<td>AEM 420</td>
<td>Computational Fluid Dynamics</td>
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<td>Computational Aerospace Structures</td>
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</tr>
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## SENIOR YEAR

### Fall

15 credit hours

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### Spring

16 credit hours

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### HU/L/FA Elective

HU/L/FA 3 (see note 2)

### HI/SB Elective

HI/SB 3 (see note 2)

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- MATH: Mathematics
- NS: Natural Science Requirement
- W: Writing Requirement

**Key**

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

**Course # Title Area & Credits**

- **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 306 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

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Dr. John Baker, Department Head
Aerospace Engineering & Mechanics

Version: 01_21_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

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

#### Spring
16 credit hours

- MATH 125  Calculus II  MATH 4
- AEM 250  AEM 264  PH 106  MATH 227  MATH 237  ME 215

### SOPHOMORE YEAR

#### Fall
15 credit hours

- ENGR 103  Engineering Foundations  ENGR 3
- AEM 201  ENGR 161
- PH 105  MATH 125  ENGR 103
- AEM 201  MATH 126  ENGR 103
- AEM 250  AEM 264  AEM 311
- MATH 125

#### Spring
16 credit hours

- AEM 201  MATH 126
- AEM 250  AEM 264  AEM 311
- MATH 227
- AEM 311  AEM 349  AEM 360  AEM 368

### Notes:

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**Legend**
- C  Computer Requirement
- ES  Engineering Science
- FC  Freshman Composition
- HS  History/Social & Behavioral Sciences
- HU/L/FA  Humanities/Literature/Fine Arts
- MATH  Mathematics
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version: 01_21_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 313
- Aerodynamics
- ES 3
- [Fall Only]
- AEM 402
- AEM 249
- AEM 264
- MATH 237
- MATH 238
- AEM 368
- Flight Dynamics & Control I
- ES 4
- [Spring Only]
- AEM 402
- AEM 468

### Spring
16 credit hours

- AEM 402
- AEM 404
- Aerospace Design I
- ES 3
- [Fall Only]
- AEM 408
- AEM 495
- AEM 249
- AEM 250
- AEM 341
- Aircraft Structures
- ES 3
- [Fall Only]
- AEM 402
- AEM 451
- AEM 240
- AEM 461
- AEM 413
- Compressible Flow
- ES 3
- [Spring Only]
- AEM 402
- AEM 408
- AEM 413
- Propulsion
- ES 3
- [Fall Only]
- AEM 402

## SENIOR YEAR

### Fall
15 credit hours

- AEM 313
- AEM 349
- Engineering Analysis
- ES/C 4
- [Fall Only]
- AEM 360
- Astronautics
- ES 3
- [Spring Only]
- AEM 368
- AEM 402
- AEM 468
- Flight Dynamics & Control II
- ES 4
- [Fall Only]
- AEM 408
- AEM 495
- Senior Seminar
- ES/W 2
- [Fall Only]
- AEM 402
- AEM 420
- AEM 461
- Computational Fluid Dynamics
- AEM 461
- Computational Aerospace Structures
- AEM 402

### Spring
16 credit hours

- AEM 215
- Thermodynamics
- ES 3
- [Fall Only]
- ME 413
- Engineering Elective
- (see below)
- ES 3
- variable
- HU/L/FA Elective
- HU/L/FA 3
- (see note 2)
- HI/ SB Elective
- HI/SB 3
- (see note 2)
- variable
- AEM 495
- AEM Computation Elective
- (see below)
- ES/C 3
- variable

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- **Title**
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- **Pre-requisites**
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