

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 |
| 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 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 Area & Credits | Downward Dependencies |
| 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 |
| version: 12_15_2021 |

| |
|--|
| Refer to Department website for Course Rotation Schedule. |
| Go to https://catalog.ua.edu/ for information on pre- and co-requisites. |

Department of Aerospace Engineering & Mechanics

BSAE Program – 124 credit hours

JUNIOR YEAR

Fall

16 credit hours

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

| | | |
|---|--|-------------------------------|
| AEM 249, or see note 1 in previous page AEM 250 AEM 251 | 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] | |
|---------------------|---|--|

| | | |
|----------|---|---------|
| MATH 126 | ME 215 Thermodynamics ES 3 | AEM 413 |
|----------|---|---------|

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

Spring

15 credit hours

| | | |
|---|--|--------------------|
| AEM 249, or see note 1 in previous page AEM 264 AEM 311 MATH 237 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 |
|----------|---|--------------------|

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

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

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] | |
| AEM 402 | | |

| | | |
|--|---|--|
| 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) | | |
|--|--|--|

| 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 | | |

| |
|---|
| <p>Engineering Elective (choose one):</p> <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. <p>AEM Computational Elective (choose one):</p> <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) |
|---|

| |
|---|
| <p>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.</p> <p>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.</p> <p>Dr. Weihua Su Aerospace Engineering & Mechanics</p> <p style="text-align: right;">version: 12_15_2021</p> |
|---|