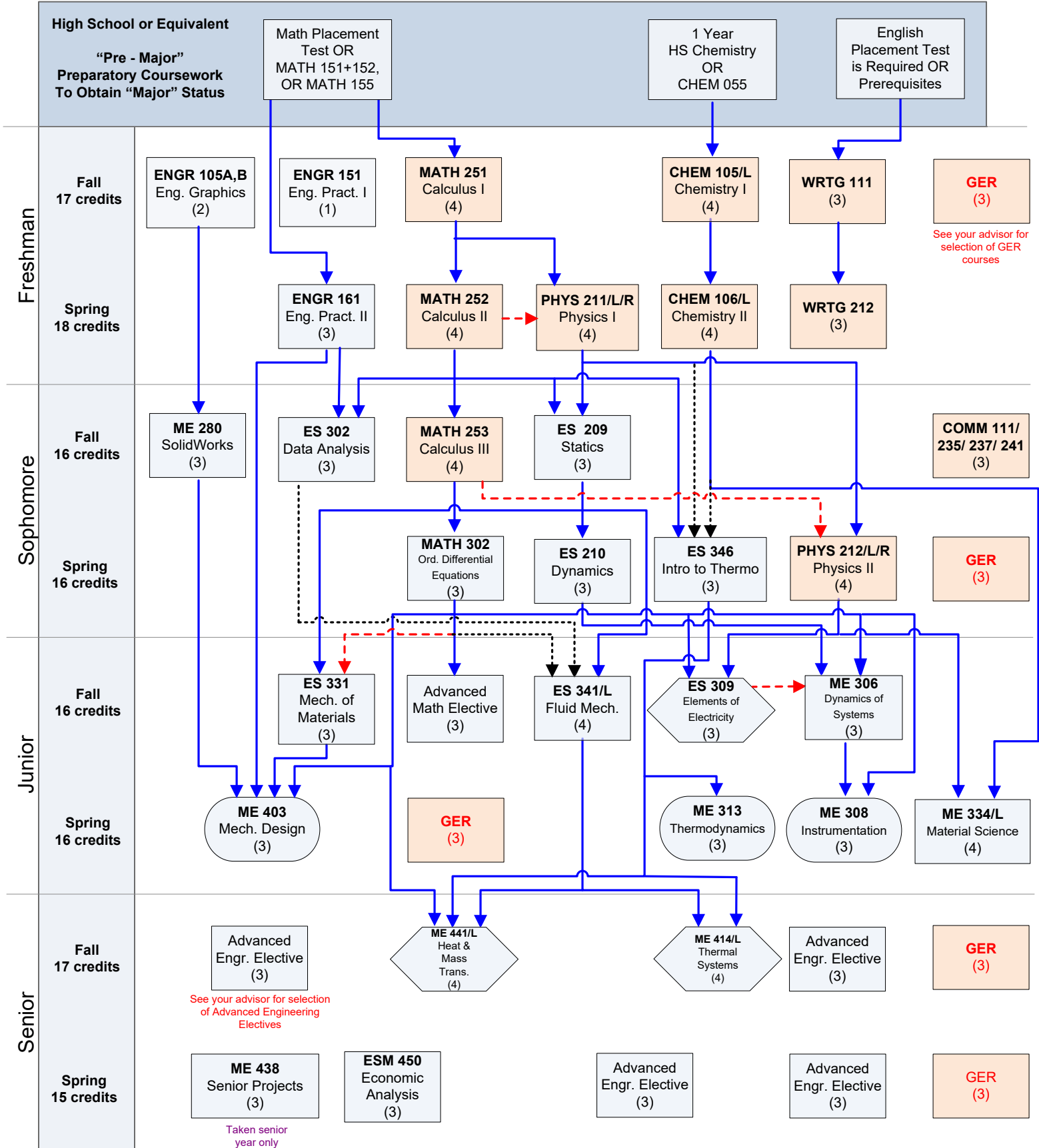


# UAA Bachelor of Science in Mechanical Engineering (BSME)

## Recommended Course Sequence & Prerequisites Flowchart

(Please note that the course catalog supersedes this document)



**Key:**

- Prerequisite: Solid blue arrow
- Prerequisite or Concurrent: Dashed red arrow
- Either Class as Prerequisite: Dotted black arrow
- Offered EVERY Semester: Light blue box
- Fulfills UAA GER requirement: Light orange box
- Offered FALL only: Light blue hexagon
- Offered SPRING only: Light blue oval

### **Advanced Engineering Electives (12 credits)**

Mechanical Engineering students are required to take 12 credits of advanced engineering elective courses, of which at least 6 credits must be ME prefix courses from the list below. The remaining 6 credits may be ME prefix or non-ME prefix, but if you choose to go off the list *you must petition to obtain prior approval from the ME Department faculty.*

<b>Course</b>	<b>Number</b>	<b>Description</b>	<b>Credits</b>	<b>Prerequisites (must be completed with min. grade of C)</b>
ME	A408 or A608	Mechanical Vibrations	3	EE A306 or ME A306 and ES A331
ME	A415 or A615	Composite Materials	3	ES A331 and ME A280 and ME A403
ME	A420	Automotive Engineering	3	[EE A306 or ME A306] and ES A331 and ME A280
ME	A421 or A621	Engineering Finite Element Analysis	3	ES A210 and ES A331 and ES A341 and ES A346
ME	A442 or A642	Advanced Fluid Mechanics	3	ES A341 and MATH A302
ME	A450	Manufacturing Design	3	ENGR A105A and ENGR A105B and ENGR A105C and ENGR A151 and ENGR A161 and ME A280
ME	A451 or A651	Aerodynamics	3	MATH A302 and ES A341 and ME A313
ME	A453 or A653	Renewable Energy Systems Engineering	3	ES A341 and ES A346
ME	A455 or A655	HVAC Systems Optimization	3	ES A341 and ES A346
ME	A459 or A659	Fracture Mechanics	3	ES A331
ME	A460 or A660	Turbomachinery	3	ES A341 and ES A341L and ME A313
ME/EE	A471	Automatic Control	3	[EE A306 or ME A306 or EE A353] and [ES A208 or ES A210] and MATH A302
ME	A610	Biomechanics	3	Graduate standing or instructor permission
ME	A630	Advanced Mechanics of Materials	3	Graduate standing and instructor permission
ME	A664	Corrosion Processes and Engineering	3	ES A346

### **Advanced Mathematics Electives (3 credits)**

Mechanical Engineering students are required to take 3 credits from the following list of elective courses. Some acceptable electives require additional prerequisite courses. So, students are advised to carefully select the elective that best fits their course history and course plan.

<b>Course</b>	<b>Number</b>	<b>Description</b>	<b>Credits</b>	<b>Prerequisites (must be completed with min. grade of C)</b>
MATH	A314	Linear Algebra	3	MATH A202
MATH	A321	Analysis of Several Variables	3	MATH A202 and MATH A314
MATH	A371	Stochastic Processes	3	MATH A201 and STAT A307
MATH	A407	Mathematical Statistics I	3	MATH A202 and STAT A307
MATH	A410	Introduction to Complex Analysis	3	MATH A202
MATH	A422	Partial Differential Equations	3	MATH A302
MATH	A424	Advanced Engineering Mathematics: Linear and Numerical Analysis	3	MATH A302 and PHYS A211
MATH	A425	Advanced Engineering Mathematics: Partial Differential Equations and Complex Variables	3	MATH A302 and PHYS A211
MATH	A426	Numerical Analysis	3	MATH A201