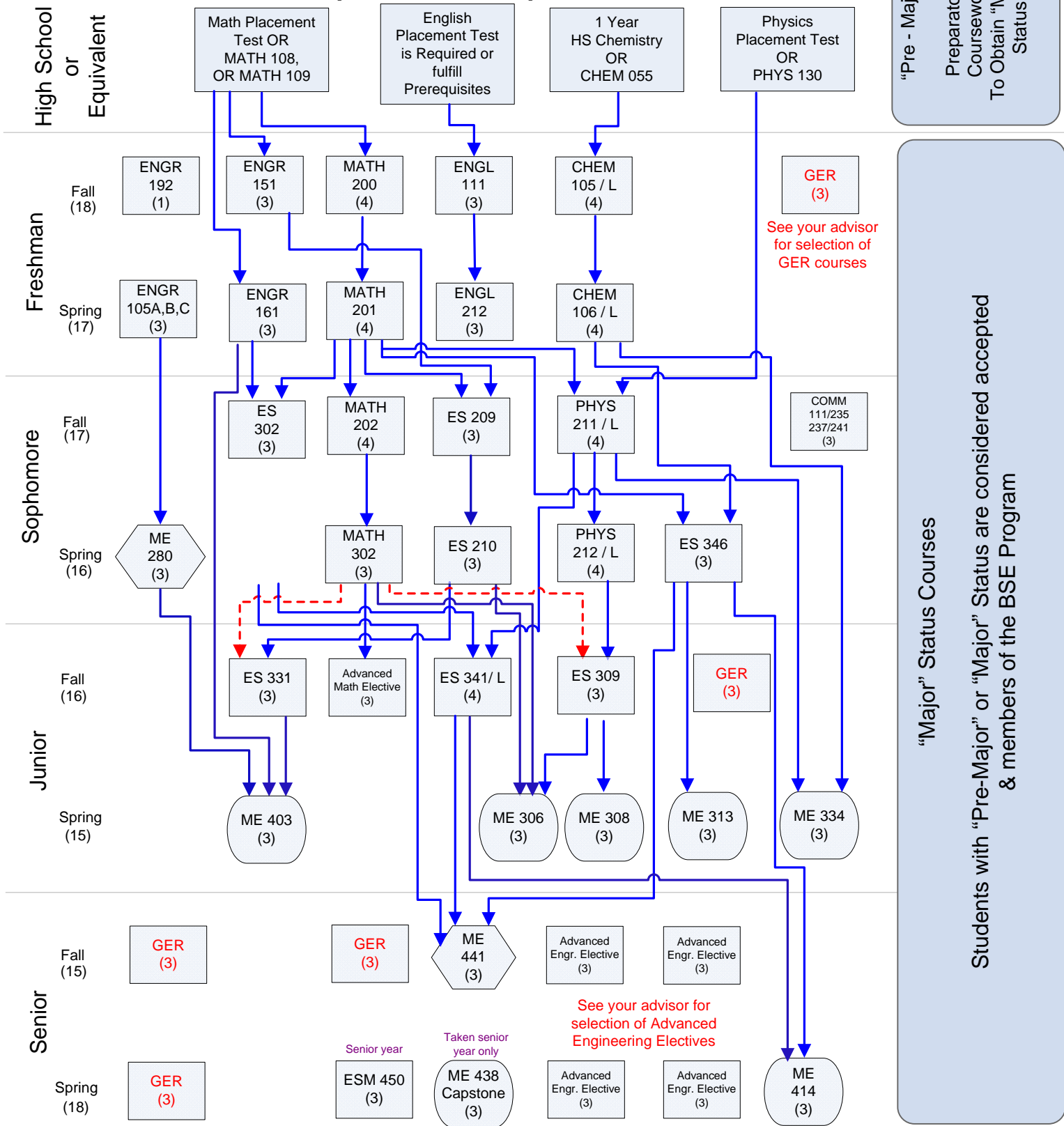


UAA Bachelor of Science in Engineering (BSE)

2011/2012

Mechanical Engineering Specialization

Recommended Course Sequence & Prerequisites Flowchart



"Pre - Major"
Preparatory Coursework To Obtain "Major" Status

"Major" Status Courses
Students with "Pre-Major" or "Major" Status are considered accepted & members of the BSE Program

- Key:**
- Prerequisite:
 - Prerequisite or Concurrent:
 - Either Class as Prerequisite:



132 Total Credits Required for the Degree

Advanced Mechanical Engineering/Science Electives. Course approval is required from your Engineering Faculty Advisor

BSE students specializing in Mechanical Engineering are required to take 12 credits from the following list of elective courses. Most courses require prerequisites and faculty advisor approval is required. Students should coordinate the other degree requirements to satisfy any prerequisite requirements.

<u>Course Number</u>	<u>Description</u>	<u>Credits</u>	<u>Prerequisites</u>
AEST A608	Fundamentals of Air Pollution	3	Instructor Permission
CE A441	Intro to Environmental Engineering	3	CHEM A106, CHEM A106L, ES A341
CE A442	Environmental Systems Design	3	CE A441
CE A600	Fundamentals of Environ. Sci. & Engr.	3	Graduate Standing or permission
ME A408	Mechanical Vibrations	3	ES A331, ME A306
ME A450	Manufacturing Design	3	ENGR105A, ENGR 151, ENGR 161, ME 280, ME 302
ME A453	Renewable Energy Systems Engineering	3	ES A341, ES A346
ME A455	HVAC Systems Optimization	3	ES A341, ES A346
ME A459/659	Fracture Mechanics	3	ES A331
ME/EE A471	Automatic Controls	3	[ME A306 or EE A353], MATH A302, [ES A208 or ES 210]
ME A664	Corrosion Processes & Engineering	3	ES A346
ME A685	Arctic Heat & Mass Transfer	3	ES A346

CE A403 or CE A603 (Arctic Engineering) or ES 411 Northern Design (3 credits). Only one of these courses may be taken.

>>>Other courses may also be taken for Advanced Engineering Electives but must first be approved by your engineering faculty advisor and petitioned.

Advanced Mathematics Electives (3 credits)

BSE 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.

<u>Course Number</u>	<u>Description</u>	<u>Credits</u>	<u>Prerequisites</u>
MATH A310	Numerical Methods	3	MATH A314
MATH A314	Linear Algebra	3	MATH A202
MATH A321	Analysis of Several Variables	3	MATH A202, MATH A314
MATH A371	Stochastic Processes	3	MATH A201, STAT A307
MATH A407	Mathematical Statistics I	3	MATH A202, STAT A307
MATH A410	Introduction to Complex Analysis	3	MATH A202
MATH A422	Partial Differential Equations	3	MATH A302
MATH A423	Advanced Engineering Mathematics	3	MATH A302