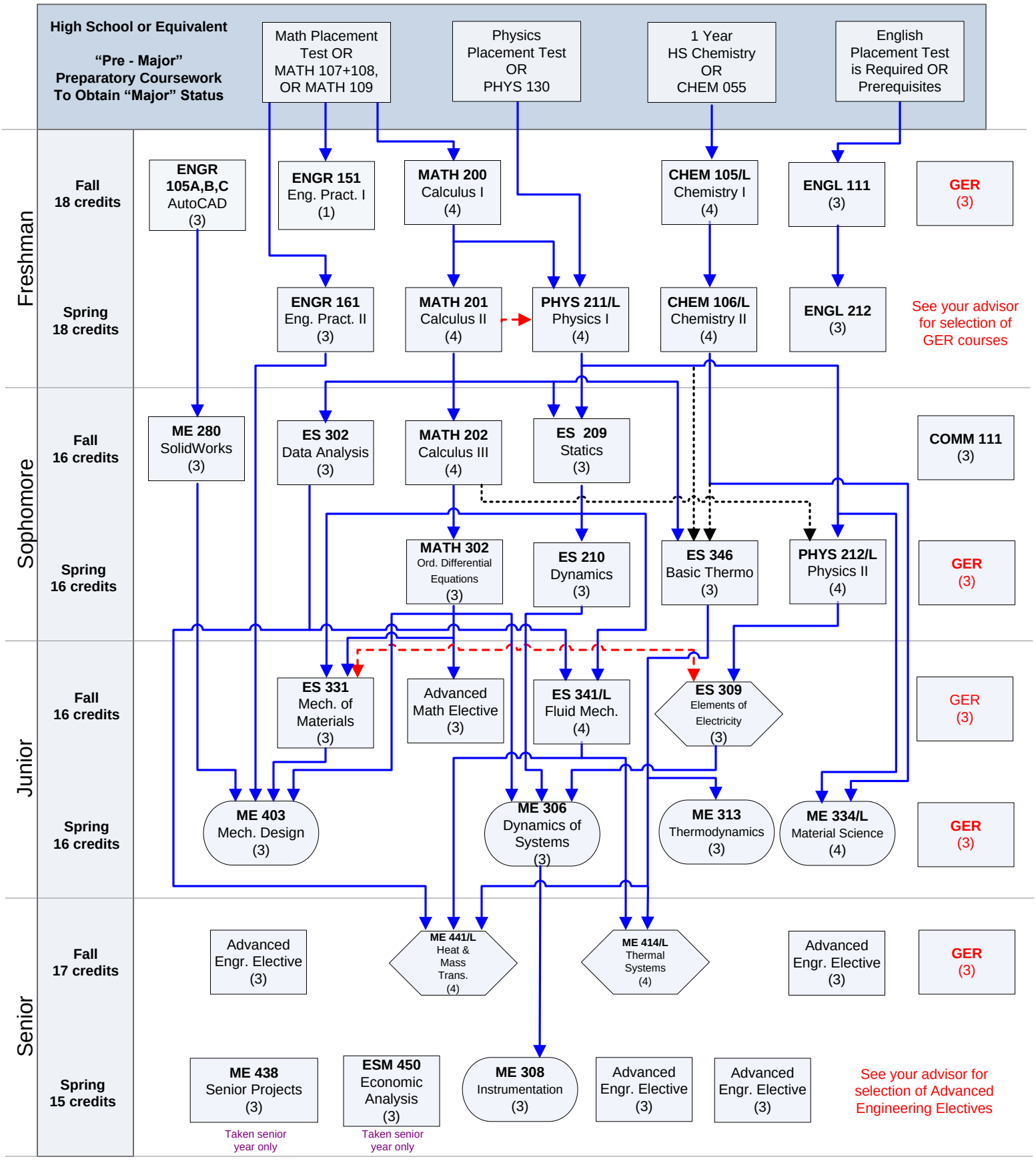
UAA Bachelor of Science in Engineering (BSE)
Mechanical Engineering Specialization
Recommended Course Sequence & Prerequisites Flowchart

2013/2014



Key:

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

Offered EVERY Semester

Offered FALL only

Offered SPRING only

V. 2-19-13

Find more information on the web at http://www.engr.uaa.alaska.edu/

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.

Course	Number	Description	Credits	Prerequisites
AEST	A608	Fundamentals of Air Pollution	3	Registration Restrictions: enrolled in AEST, CE, or BIOL graduate programs, or gain instructor approval.
CE	A441	Fundamentals of Environmental Engineering and Applied Environmental Science	3	CHEM A106 and CHEM A106L and MATH A200
CE	A442	Environmental System Design	3	CE A441 and ES A341
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	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	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/EE	A471	Automatic Control	3	[EE A306 or ME A306 or EE A353] and [ES A208 or ES A210] and MATH A302
ME	A664	Corrosion Processes and Engineering	3	ES A346

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

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

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.

Course	Number	Description	Credits	Prerequisites
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	A423	Advanced Engineering Mathematics	3	MATH A302
MATH	A426	Numerical Methods	3	MATH A201