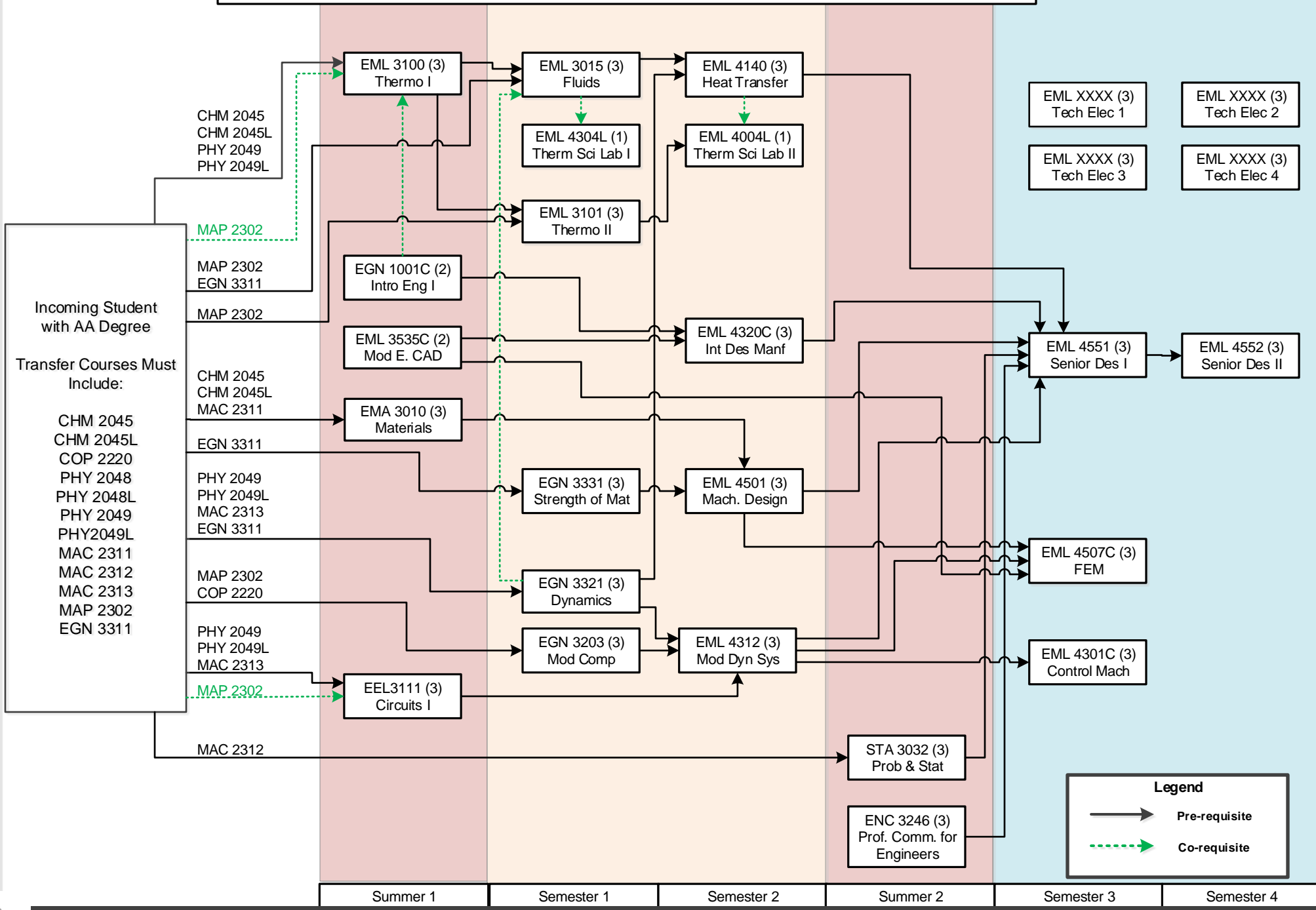


Bachelors of Science in Mechanical Engineering Transfer Student Curriculum Map 2020-21



Bachelors of Science in Mechanical Engineering 4-Year Curriculum Map for 2020-2021 – Transfer Students

The page represents a flowchart of required courses arranged in vertical boxes. There are 3 wider vertical boxes, the first of which represents a list of transfer courses an incoming student with an AA degree should have completed, the second and third wider boxes represent a year and contains two columns representing two semesters within each year. The two narrower boxes represent summer terms. Semesters are identified by number indicated by labels at the bottom of each column. From left to right:

- The first column lists the transfer courses that an incoming student should already have completed.
- The second column represents Summer 1
- The third column represents Year 1 and contains 2 columns of courses for Semester 1 and Semester 2 respectively
- The third column represents Summer 2
- The third column represents Year 2 and contains 2 columns of courses for Semester 3 and Semester 4 respectively

Each box in the flowchart represents a single course, and contains the course prefix and number, number of credit hours and an abbreviated course title. Lines between the boxes define the relationship between courses (pre-requisite, co-requisite, or non-engineering general education course). A legend is provided to explain how colored lines (red and green) are used to indicate a prerequisite vs co-requisite relationship. The relationship indicated by the lines and their colors fully described below:

Incoming Students with an AA Degree should have competed the following courses:

- CHM 2045 – General Chemistry I (3 credit hours)
- CHM 2045L – General Chemistry I Lab (1 credit hour)
- COP 2200 – Computer Science (3 credit hours)
- PHY 2048 – Calculus-based Physics I (3 credit hours)
- PHY 2048L – Calculus-based Physics I Lab (1 credit hour)
- PHY 2049 – Calculus-based Physics II (3 credit hours)
- PHY 2049L – Calculus-based Physics II Lab (1 credit hour)
- MAC 2311 – Calculus I (4 credit hours)
- MAC 2312 – Calculus II (4 credit hours)
- MAC 2313 – Calculus III (4 credit hours)
- MAP 2302 – Differential Equations (3 credit hours)
- EGN 3311 – Statics (3 credit hours)

Courses in Summer 1:

- EML 3100 – Thermodynamics I (3 credit hours)
 - Prerequisite CHM 2045 (General Chemistry I), CHM 2045L (General Chemistry I Lab), PHY 2042 (Physics for Engineers II), and PHY 2049L (Calculus-based Physics II Lab)
 - Co-requisite EGN 1001C (Introduction to Engineering I) and MAP 2302 (Differential Equations)
- EGN 1001C – Introduction to Engineering I (2 credit hours)
 - Co-requisite course MAC 2311 (Precalculus) or any higher-level MAC course (2xxx)
- EML 3535C – Modern Engineering CAD (2 credit hours)
- EMA 3010 – Introduction to Materials Science and Engineering (3 credit hours)

- Prerequisite course CHM 2045 (General Chemistry I), CHM 2045L (General Chemistry I Lab), and MAC 2311 (Calculus I)
- EEL 3111 – Circuit Analysis I (3 credit hours)
 - Prerequisite PHY 2042 (Physics for Engineers II) and MAC 2313 (Calculus III)
 - Co-requisite MAP 2302 (Differential Equations)

Courses in Year 1, Semester 1:

- EML 3015 – Fluids (3 credit hours)
 - Prerequisite EML 3100 (Thermodynamics I), EGN 3311 (Statics), and MAP 2302 (Differential Equations)
 - Co-requisite EGN 3321 (Dynamics)
- EML 4304L – Thermal Sciences Laboratory I (1 credit hour)
 - Co-requisite EML 3015 (Fluids)
- EML 3101 – Thermodynamics II (3 credit hours)
 - Prerequisite EML 3100 (Thermodynamics I) and MAP 2302 (Differential Equations)
- EGN 3331 – Strength of Materials (3 credit hours)
 - Prerequisite EGN 3311 (Statics)
- EGN 3321 – Dynamics (3 credit hours)
 - Prerequisite EGN 3311 (Statics), PHY 2042 (Physics for Engineers II), PHY 2049L (Calculus-based Physics II Lab), and MAC 2313 (Calculus III)
- EGN 3203 – Modern Computation Methods (3 credit hours)
 - Prerequisite MAP 2302 (Differential Equations) and COP 2220 (Computer Science)

Courses in Year 1, Semester 2:

- EML 4140 – Heat Transfer (3 credit hours)
 - Prerequisite EML 3015 (Fluids) and EGN 3321 (Dynamics)
- EML 4004L – Thermal Sciences Lab II (1 credit hour)
 - Prerequisite EML 3101 (Thermodynamics II)
 - Corequisite EML 4140 (Heat Transfer)
- EML 4320C – Integrated Design and Manufacturing (3 credit hours)
 - Prerequisite EGN 1001C (Introduction to Engineering I) and EML 3535C (Modern Engineering CAD)
- EML 4501 – Machine Design (3 credit hours)
 - Prerequisite EGN 3331 (Strength of Materials) and EMA 3010 (Introduction to Materials Science and Engineering)
- EML 4312 – Modeling and Analysis of Dynamic Systems
 - Prerequisite EGN 3321 (Dynamics), EGN 3203 (Modern Computation Methods), and EEL 3111 (Circuits I)

Courses in Summer 2:

- STA 3032 – Probability and Statistics for Engineers (3 credit hours)
 - Taught by another department
 - Prerequisite MAC 2312 (Calculus II)
- ENC 3246 – Professional Communications for Engineers (3 credit hours)
 - Taught by another department

Courses in Year 2, Semester 3:

- EML 4551 – Senior Capstone Design I (3 credit hours)
 - Prerequisite EML 4140 (Heat Transfer), EML 4320C (Integrated Design and Manufacturing), EML 4501 (Machine Design), STA 3032 (Probability and Statistics for

Engineers), ENC 4234 (Professional Communications for Engineers), and EML 4312 (Modeling and Analysis of Dynamic Systems)

- EML 4507C – Finite Element Model/Analysis (3 credit hours)
 - Prerequisite EML 3535C (Modern Engineering CAD), EML 4501 (Machine Design), and EML 4312 (Modeling and Analysis of Dynamic Systems)
- EML 4301C – Control of Machinery
 - Prerequisite EML 4312 (Modeling and Analysis of Dynamic Systems)
- EML XXXX – Technical Elective 3 (3 credit hours)
 - See course catalog for details
- EML XXXX – Technical Elective 1 (3 credit hours)
 - See course catalog for details

Courses in Year 2, Semester 4:

- EML 4552 – Senior Capstone Design II (3 credit hours)
 - Prerequisite EML 4551 (Senior Capstone Design I)
- EML XXXX – Technical Elective 4 (3 credit hours)
 - See course catalog for details
- EML XXXX – Technical Elective 5 (3 credit hours)
 - See course catalog for details