

**MECHANICAL ENGINEERING ARTICULATION AGREEMENT GUIDE**Henry Ford College – **AS in Pre-Engineering**Eastern Michigan University – **BS in Mechanical Engineering****Henry Ford College Courses:****Eastern Michigan University Courses:****Michigan Transfer Agreement (MTA) Requirements (33 credits)**

Students with the MTA endorsement on their community college transcript have satisfied EMU's General Education Core Requirements and will be required to complete only the General Education Application Requirements of one Perspectives on a Diverse World course, one Learning Beyond the Classroom experience, and a Writing Intensive course in the major. Courses listed below for the MTA also satisfy program requirements at EMU and/or HFC. For HFC approved MTA courses go to the community college's website. Students without an MTA or MACRAO endorsement must complete EMU's general education program.

**1. A course in English Composition**

ENG 131 Introduction to College Writing..... 3      WRTG 120 General Transfer Credit..... 3

**2. A course in English Composition or Communication**

\* ENG 135 Business and Technical Writing and Research ..... 3      WRTG 121 Composition II (prerequisite for SET 350W) ..... 3

**3. A course in Mathematics**

\* MATH 180 Calculus I..... 5      MATH 120 Calculus I (4)+1 ..... 5

**4. Two courses in Natural Sciences from different disciplines (one lab required)**

\* CHEM 141 Principles in General &amp; Inorganic Chemistry ..... 5      CHEM 121/122 General Chemistry I (4)+1..... 5

\* PHYS 231 Engineering Physics I ..... 5      PHY 223 Mechanics and Sound ..... 5

**5. Two courses in Humanities and Fine Arts from different disciplines**

Choose two from the approved MTA list ..... 6      General Transfer Credit..... 6

**6. Two courses in Social Sciences from different disciplines**

Choose one from BEC 151 or 152 ..... 3      ECON 201 or ECON 202..... 3

Choose one from the approved MTA list..... 3      General Transfer Credit..... 3

**If needed, complete additional credits in any of the above categories to meet the 30 credit minimum for the MTA.****EMU's Perspectives on a Diverse World requirement: Complete one course from the following list:**

**These courses also satisfy an MTA area:** **Natural Science:** BIO 138 (non-lab); **Humanities:** ART 224, 225, 226, 227; ENG 243, 248; PHIL 201; WR 233, 236, 241; **Social Science:** ANTH 131, 151, 152, 154; EDU 296; GEOG 132; HIST 113, 243, 252, 261; POLS 152; PSY 296; SOC 152, 251. **This course applies, but does not satisfy the MTA:** ART 229, BBA 250; LGL 248; PLGL 248

**HFC Pre-Engineering Program Requirements (29 credits)**

\* PHYS 232 Engineering Physics II ..... 5      PHY 224 Electricity and Light..... 5

\* MATH 183 Calculus II ..... 5      MATH 121 Calculus II (4)+1..... 5

\* MATH 280 Calculus III ..... 5      MATH 223 Multivariable Calculus (4)+1 ..... 5

\* MATH 288 Differential Equations..... 5      MATH 325 Differential Equations (3)+2 ..... 5

\* ENGR 130 Introduction to Engineering ..... 3      ME 100 Intro to Engineering Design &amp; Manufacturing ..... 3

\* ENGR 125 Introduction to Computation for Engineers ..... 3      CEET 151 Intro to Computing in Engineering Technology... 3

1 \* ENGR 232 Statics ..... 3      ME 211 Statics ..... 3

**EMU Requirements and Electives that may be Taken at HFC or EMU (13 credits)**

1 \* ENGR 233 Dynamics ..... 3      ME 312 Dynamics ..... 3

\* ENGR 235 Mechanics of Materials ..... 2      ME 313 Mechanics of Materials (3)-1..... 2

\* MATH 283 Linear Algebra ..... 3      MATH 122 Elementary Linear Algebra ..... 3

Open Electives ..... 5      General Transfer Credit..... 5

**Credits at HFC:..... 79      Credits that transfer to EMU..... 79**

\*Required for EMU's BS in Mechanical Engineering program. If not transferred, must be completed at EMU.

1 To receive credit for ME 211, students must have already completed PHY 231 with a C or higher. To receive credit for ME 312, students must complete PHYS 231 and ENGR 232 with a C or higher.

**Sign up with us:** If you let us know you are using this articulation agreement we can stay in touch with you and provide information and advising to you while you are still at your community college.

**MECHANICAL ENGINEERING ARTICULATION AGREEMENT GUIDE**

Henry Ford College – **AS in Pre-Engineering**

Eastern Michigan University – **BS in Mechanical Engineering**

**Completion of the BS in Mechanical Engineering**

**Major Requirements (45 credits)**

**Foundational Requirements (6 credits)**

EECE 212	Engineering Circuit Analysis .....	3
SET 350W	Engineering Communication .....	3

**Technical Requirements (32 credits)**

ME 316	Thermodynamics .....	3
ME 317	Fluid Mechanics (or PHY 485).....	3
ME 325	Mechanics of Composite Materials.....	2
ME 326	Composite Design and Process .....	1
ME 330	Machine Design.....	3
ME 418	Heat Transfer.....	3
ME 420	Thermo/Fluids Lab.....	2
ME 431	Mechanical Design and Analysis.....	3
ME 432	Machine Dynamics .....	3
ME 435	Computational Solid Mechanics .....	3
ME 492	Senior Capstone I.....	3
ME 493	Senior Capstone II.....	3

**General Credit (7 credits)**

Students must complete a minimum of 45 credits at EMU under this agreement. Students may choose any 100 level or higher courses at EMU to complete this requirement.

**LBC Requirement**

Students must complete one Learning Beyond the Classroom course or noncredit experience offered by EMU. Consult your advisor for options.

<b>Credits at EMU:</b> .....	<b>45</b>
<b>Transfer Credits:</b> .....	<b>79</b>
<b>Total Credits:</b> .....	<b>124</b>

**Sample course sequence**

**Winter Semester (8 credits)**

ELEC 212	W, pre-req PHY 224.....	3
SET 350W	pre-req WRTG 121 .....	3
ME 325	W, pre-req ME312 or PHY 230), ME 211, 313 ..	2

**Fall Semester (10 credits)**

ME 316	F, pre-req PHY 223, MATH 120, 121.....	3
General Credit	.....	7

**Winter Semester (10 credits)**

ME 317	W, pre-req (ME 316 or PHY 260), ME 211 .....	3
ME 326	W, pre-req ME 325.....	1
ME 330	W, pre-req ME 313 .....	3
ME 431	W, pre-reqs ME 100 and ME 313 .....	3

**Fall Semester (12 credits)**

ME 432	F, pre-reqs (ME 312 or PHY 230) & ME 431 ..	3
ME 492	F, pre-req SET 350W (concur ME 431, 432) ..	3
ME 418	F, pre-reqs ME 316, ME 317; MATH 223, 325	3
ME 435	F, pre-reqs ME 431, MATH 122, 325 .....	3

**Winter Semester (5 credits)**

ME 420	W, pre-reqs ME 316, 317 and MATH 325.....	2
ME 493	W, pre-req ME 492.....	3

**MECHANICAL ENGINEERING ARTICULATION AGREEMENT GUIDE**Henry Ford College – **AS in Pre-Engineering**Eastern Michigan University – **BS in Mechanical Engineering****Additional Information:**

- Each institution will determine the satisfaction of their individual program and degree requirements. Both institutions agree to accept transferable courses from each other and from other regionally accredited institutions. HFC courses indicated with an \* are required for EMU's BS in Mechanical Engineering. Substitutions for these courses must be approved by the EMU program coordinator.
- Students with the MTA endorsement on their community college transcript have satisfied EMU's General Education Core Requirements and will be required to complete only the General Education Application Requirements of one "Perspectives on a Diverse World" course, one "Learning Beyond the Classroom" experience, and a "Writing Intensive" course in the major. The Perspectives on a Diverse World requirement may be transferred to EMU.  
*To use the Michigan Transfer Agreement (MTA), students must have an official community college transcript, with the "MTA Satisfied" endorsement sent to EMU's Admissions Office. Students who do not have "MTA Satisfied" on their community college transcript, will be required to satisfy EMU's general education requirements as applied to transfer students. The MTA may be completed after admission to EMU, however, students should inform their advisors or they may be advised to complete additional courses for the general education program. If already on the transcript, the MACRAO designation will be accepted at EMU after August 2019.*
- Only courses with a grade of "C" or better (2.0 on a 4.0 scale) will be accepted for transfer to either institution.
- Under this agreement, EMU will waive the 60-hour rule and require that a minimum of 30 credit hours must be completed in EMU courses, with at least 15 hours in the program at the 300-level or above. Of the last 30 hours completed before graduating, a minimum of 10 credit hours must be in courses offered by EMU. A minimum of 124 credit hours, completed in-residence or accepted in transfer, is required for graduation.
- Students must satisfy all admission requirements at the time of application for admission to EMU, including submitting transcripts from all previously attended colleges. HFC students will receive equal consideration with other students for course registration and financial aid.
- Admission Requirements: To be considered for admission students must meet the following requirements:
  - A minimum EMU cumulative GPA of 2.7. (If a student has not yet established an EMU GPA, a combined GPA of 2.7 from all transfer institutions will be accepted)
  - Completion of PHY 223 with a grade of C or higher (or equivalent Transfer Credit)
  - Completion of MATH 120 and MATH 121, with a grade of C or higher (or equivalent Transfer Credit)

Application Process: Students who wish to be admitted must do the following:

- Complete all requirements listed above.
  - Submit an online application (<https://emich.tfaforms.net/217811>) by January 1st, May 1st, or August 1st.
  - Attend a mandatory meeting with a Mechanical Engineering faculty member or CET Staff Advisor. (Student will be contacted to schedule appointment after the receipt of their application)
- Students are encouraged to contact EMU's GameAbove College of Engineering and Technology Student Services before applying to EMU. To facilitate advising and the evaluation of transcripts, [sign up for this articulation agreement](#) and bring a copy of this articulation guide to all advising sessions.

**Effective Date: September 1, 2021 until August 31, 2024.**

This is a renewal of an agreement made in September 2018. This agreement is consistent with the 2021-2022 catalog. Students have until summer 2029 to graduate from Eastern Michigan University following this agreement. In the event that a student does not complete the program within seven years, they may be required to have their credits reevaluated using the requirements of the current articulation guide.

**Contacts:****Henry Ford College**

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**Eastern Michigan University**

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