

**MECHANICAL ENGINEERING ARTICULATION AGREEMENT GUIDE**

Schoolcraft College –Associate in Engineering

Eastern Michigan University – BS in Mechanical Engineering

**Schoolcraft College Courses:****Transfer to Eastern Michigan University as:****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 EMU General Education Application Requirements of one Perspectives on a Diverse World course, one Learning Beyond the Classroom experience, and one writing intensive course in the major. Courses listed below for the MTA also satisfy program requirements at EMU and/or SC.

**1. A course in English Composition**

|                                       |   |   |   |
|---------------------------------------|---|---|---|
| * ENG 102 English Composition 2 ..... | 3 | WRTG 121 Comp II (pre-req for SET 350W) ..... | 3 |
|---------------------------------------|---|---|---|

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

|   |   |                           |   |
|---|---|---------------------------|---|
| Choose from the approved MTA list ..... | 3 | University Elective ..... | 3 |
|---|---|---------------------------|---|

**3. A course in Mathematics**

|   |   |                                 |   |
|---|---|---------------------------------|---|
| 1* MATH 150 Calculus with Analytic Geometry I ..... | 5 | MATH 120 Calculus I (4)+1 ..... | 5 |
|---|---|---------------------------------|---|

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

|  |   |                                   |   |
|--|---|-----------------------------------|---|
| 1* PHYS 211 Physics for Scientists and Engineers I ..... | 5 | PHY 223 Mechanics and Sound ..... | 5 |
|--|---|-----------------------------------|---|

|                                      |   |  |   |
|--------------------------------------|---|--|---|
| * CHEM 111 General Chemistry I ..... | 4 | CHEM 121/122 General Chemistry I ..... | 4 |
|--------------------------------------|---|--|---|

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

|   |   |                           |   |
|---|---|---------------------------|---|
| Choose from the approved MTA list ..... | 6 | University Elective ..... | 6 |
|---|---|---------------------------|---|

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

|   |   |   |   |
|---|---|---|---|
| ECON 201 Principles of Macroeconomics ..... | 4 | ECON 201 Principles of Macroeconomics (3)+1 ..... | 4 |
|---|---|---|---|

|   |   |                            |   |
|---|---|----------------------------|---|
| Choose a from the approved MTA list ..... | 3 | University Electives ..... | 3 |
|---|---|----------------------------|---|

**If needed, complete an additional course in 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:** BIOL 104; GEOG 212; **Humanities:** ENG 170, 275; HIST 138; HUM, 201, 202, 203, 204; **Social Sciences:** ANTH 112, 201, 214; GEOG 133; HIST 138; POLS 207, 209; SOC 210

**These courses apply, but do not satisfy the MTA:** BUS 240; CCD 217; EDUC 200; SPE 100

**SC Associate in Engineering Program Requirements (20 credits)**

|  |   |                                  |   |
|--|---|----------------------------------|---|
| 1* MATH 151 Calculus with Analytic Geometry II ..... | 5 | MATH 121 Calculus II (4)+1 ..... | 5 |
|--|---|----------------------------------|---|

|  |   |   |   |
|--|---|---|---|
| * MATH 240 Calculus with Analytic Geometry III ..... | 5 | MATH 223 Multivariable Calculus (4)+1 ..... | 5 |
|--|---|---|---|

|   |   |   |   |
|---|---|---|---|
| * MATH 252 Differential Equations ..... | 5 | MATH 325 Differential Equations (3)+2 ..... | 5 |
|---|---|---|---|

|  |   |                                     |   |
|--|---|-------------------------------------|---|
| * PHYS 212 Physics for Scientists and Engineers II ..... | 5 | PHY 224 Electricity and Light ..... | 5 |
|--|---|-------------------------------------|---|

**EMU Requirements and Electives that may be taken at SC or EMU (26 credits)**

|   |   |  |   |
|---|---|--|---|
| * ENGR 100 Introduction to Engineering and Technology ..... | 3 | ME 100 Intro to Engineering Design & Manufacturing ... | 3 |
|---|---|--|---|

|                          |   |                      |   |
|--------------------------|---|----------------------|---|
| * ENGR 201 Statics ..... | 3 | ME 211 Statics ..... | 3 |
|--------------------------|---|----------------------|---|

|   |   |                                     |   |
|---|---|-------------------------------------|---|
| * ENGR 202 Mechanics of Materials ..... | 3 | ME 313 Mechanics of Materials ..... | 3 |
|---|---|-------------------------------------|---|

|                           |   |                             |   |
|---------------------------|---|-----------------------------|---|
| * ENGR 203 Dynamics ..... | 4 | ME 312 Dynamics (3)+1 ..... | 4 |
|---------------------------|---|-----------------------------|---|

|                                 |   |  |   |
|---------------------------------|---|--|---|
| * MATH 230 Linear Algebra ..... | 4 | MATH 122 Elementary Linear Algebra (3)+1 ..... | 4 |
|---------------------------------|---|--|---|

|                      |   |                            |   |
|----------------------|---|----------------------------|---|
| Open Electives ..... | 9 | University Electives ..... | 9 |
|----------------------|---|----------------------------|---|

*Students planning to be full time at EMU for financial aid should complete open electives at EMU*

**Credits at SC:.....79      Credits that apply to EMU's program..... 79**

\* Required for the BS in Mechanical Engineering at EMU. Must be taken at EMU if not completed prior to transferring.

<sup>1</sup> Admission requirement for the BS in Mechanical Engineering at EMU. See page 3 of guide for all admission requirements.

**Sign up to use this articulation agreement. 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.**

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**Completion of the BS in Mechanical Engineering at EMU****Major Requirements (45 credits)****Additional Requirements (9 credits)**

|                       |  |   |
|-----------------------|--|---|
| CEET 151              | Intro to Computing in Engineering Tech.....    | 3 |
| ELEC 212              | Engineering Circuit Analysis (or EECE 212).... | 3 |
| <sup>1</sup> SET 350W | Engineering Communication .....                | 3 |

**Technical Requirements (32 credits)**

|        |                                       |   |
|--------|---------------------------------------|---|
| ME 316 | Thermodynamics (or PHY 360).....      | 3 |
| ME 317 | Fluid Mechanics (or PHY 485).....     | 3 |
| ME 325 | Mechanics of Composite Materials..... | 2 |
| ME 326 | Composite Design and Processes .....  | 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 |

**Open Elective (4 credits)**

Choose any course (s) at EMU at the 100 level or higher .....4

**LBC Requirement**

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

**Credits at EMU: ..... 45****Transfer Credits: ..... 79****Total Credits: ..... 124****Sample course sequence**

Students should set up an appointment with a faculty advisor to assure correct sequencing and courses offerings.

**Winter Semester (9 credits)**

|          |                         |   |
|----------|-------------------------|---|
| CEET 151 | F,W .....               | 3 |
| ELEC 212 | W, pre-req PHY 224..... | 3 |
| SET 350W | pre-req WRTG 121.....   | 3 |

**Fall Semester (7 credits)**

|                           |  |   |
|---------------------------|--|---|
| ME 316                    | F, pre-req PHY 223, MATH 120, 121..... | 3 |
| Open Elective Credit..... |  | 4 |

**Winter Semester (9 credits)**

|        |  |   |
|--------|--|---|
| ME 317 | W, pre-req (ME 316 or PHY 260), ME 211 ..... | 3 |
| ME 325 | W, pre-req ME312 or PHY 230), ME 211, 3132   |   |
| ME 326 | W, pre-req ME 325.....                       | 1 |
| ME 330 | W, pre-req ME 313 .....                      | 3 |

**Fall Semester (14 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 420 | F, pre-reqs ME 316, 317 and MATH 325.....   | 2 |
| ME 431 | F, pre-reqs ME 100 and ME 313.....          | 3 |

**Winter Semester (6 credits)**

|        |  |   |
|--------|--|---|
| ME 435 | W, pre-reqs ME 431, MATH 122, 325..... | 3 |
| ME 493 | W, pre-req ME 492.....                 | 3 |

\* EMU requires 124 credits to graduate. If sufficient credits are not transferred to EMU, the course credit must be taken at EMU.

<sup>1</sup> Satisfies EMU's Writing Intensive in the major requirement.

**MECHANICAL ENGINEERING ARTICULATION AGREEMENT GUIDE**Schoolcraft College –**Associate in Engineering**Eastern Michigan University – **BS in Mechanical Engineering****Additional Information:**

1. Each institution will determine the satisfaction of their individual program and degree requirements. Both institutions agree to accept transferrable courses from each other and from other regionally accredited institutions. SC courses indicated with an \* are required for EMU’s Mechanical Engineering program. Substitutions for these courses must be approved by the EMU program coordinator.
2. 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.*
3. Only courses with a grade of “C” or better (2.0 on a 4.0 scale) will be accepted for transfer to either institution.
4. 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.
5. Students must satisfy all admission requirements at the time of application for admission to EMU, including submitting transcripts from all previously attended colleges. SC students will receive equal consideration with other students for course registration and financial aid.
6. Admission requirements for the BS in Mechanical Engineering:
  - 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)
7. Students are encouraged to contact the College of 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, 2019 through August 31, 2022.**

This agreement is consistent with the 2019-2020 catalog. Students have until summer 2027 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:**

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