

## ELECTRICAL & COMPUTER ENGINEERING ARCHIVED ARTICULATION AGREEMENT GUIDE

Macomb Community College – AS in Pre- Engineering

Eastern Michigan University – BS in Electrical & Computer Engineering

### Macomb Community College Courses:

### Eastern Michigan University Courses:

#### Michigan Transfer Agreement (MTA) Requirements (30 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 MCC. For MCC approved MTA courses go to Macomb's website. Students without an MTA or MACRAO endorsement must complete EMU's general education program.

#### 1. A course in English Composition

ENGL 1180 or 1210 Communications 1 or Comp 1 .....3-4      WRTG 120      University Elective.....3-4

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

\*ENGL 1190 or 1220 Communications 1 or Comp 1 .....3-4      WRTG 121      Composition II (pre-req for SET 350W).3-4

#### 3. A course in Mathematics

\* MATH 1760 Analytic Geometry & Calculus 1 .....4      MATH 120      Calculus I .....4

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

\*CHEM 1170 General Chemistry 1 .....4      CHEM 121/122 General Chemistry I and Lab.....4

PHYS 1180 College Physics 1 .....5      PHY 221 University Elective .....5

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

Choose two from the approved MTA list.....6      University Elective .....6

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

ECON 1160 Principles of Economics 1.....3      ECON 201 University Elective .....3

Choose one from the approved MTA list.....3      University Elective.....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:

Courses on this list will satisfy an MTA area above: **Communication:** SPCH 2300; **Natural Science:** BIOL 1310; ENVS 1050; **Humanities:** ENGL 2800, 2810; INTL 2000, 2300, 2800; **Social Sciences:** ANTH 1000; ECON 2110; GEOG 2000; HIST 1260, 1700, 2375, 2420, 2520, 2650; INTL 2500, 2700; POLS 1600; or SOCY 2550; SOSC 2010

#### MCC AS in Pre-Engineering Program Requirements (32 credits)

\*ENGR 1000 Introduction to Engineering.....3      ME 100 Intro to Engineering Design & Technology ....3

CHEM 1180 General Chemistry 2.....4      CHEM 123/124 University Elective .....4

\* MATH 1770 Analytic Geometry & Calculus 2 .....4      MATH 121 Calculus II.....4

\* MATH 2000 Introduction to Linear Algebra.....3      MATH 122 Elem Linear Algebra .....3

\* MATH 2760 Analytic Geometry & Calculus 3 .....4      MATH 223 Multivariable Calculus .....4

\* MATH 2770 Differential Equations.....4      MATH 325 Differential Equations (3)+1.....4

\* PHYS 2220 Analytic Physics 1.....5      PHY 223 Mechanics and Sound.....5

\* PHYS 2230 Analytical Physics 2 .....5      PHY 224 Electricity & Light.....5

#### EMU Requirements and Electives that May be Taken at MCC or EMU (15 credits)

\*ITCS 2590 Java 1 .....4      COSC 111/112 Introduction to Programming.....4

\*ITCS 2620 Java 2 (Computer Engr Conc Only).....0-3      COSC 211 Programming Data Structures.....0-3

Open Electives (not to exceed 77 credits at Macomb)...8-11      University Electives.....8-11

**Credits at MCC:.....77      Credits that transfer to EMU..... 77**

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

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Eastern Michigan University – **BS in Electrical & Computer Engineering**

**Completion of the BS in Electrical and Computer Engineering at EMU**

**Credits at EMU: ..... 47**  
**Transfer Credits: ..... 77**  
**Total Credits: ..... 124**

**Major Requirements (47 credits)**

**Foundational Requirements (6 credits)**

- CET 151 Intro to Computing in Engineering Tech .....3
- <sup>1</sup>SET 350W Engineering Communication .....3

**Electrical & Computer Engineering (29 credits)**

- EECE 212 Engineering Circuit Analysis (or ELEC 212)....3
- EECE 213 Engineering Circuit Analysis II.....3
- EECE 251 Digital Logic Design.....3
- EECE 341 Engineering Electronics.....3
- EECE 351 Microcontrollers .....3
- EECE 371 Signals and Systems.....3
- EECE 400 EECE Professional Practice .....2
- EECE 421 Control Systems Engineering .....3
- EECE 430 Power Electronics.....3
- EECE 480 Senior Capstone.....3

**Concentration (Choose 1 below) (9-12 credits)**

**Computer Engineering Concentration**

- COSC 221 Computer Organization I .....3
- EECE 352 Digital System Designs with HDL .....3
- EECE 452 Advanced Digital System Designs with FPGA.3

**Electrical Engineering Concentration**

- EECE 342 Engineering Electronics II.....3
- EECE 365 Engineering Electromagnetics.....3
- EECE 372 Communication Systems.....3
- EECE 431 Digital Control Systems .....3

**LBC Requirement**

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

**University Elective (0-3 credits)**

Students must complete a minimum of 47 credits at EMU unless otherwise approved through the department.

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

**ARCHIVED ARTICULATION AGREEMENT GUIDE**Macomb Community College – **AS in Pre- Engineering**Eastern Michigan University – **BS in Electrical & Computer 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. MCC courses indicated with an \* are required for EMU's BS in Electrical & Computer Engineering. 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 47 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. MCC students will receive equal consideration with other students for course registration and financial aid.
6. To be considered for admission students must meet the following requirements:
  - A minimum EMU cumulative GPA of 2.5. (If a student has not yet established an EMU GPA, a combined GPA of 2.5 from all transfer institutions will be accepted)
  - Completion of PHY 224, MATH 120, MATH 121, and EECE 212, with a grade of C or above, (or equivalent Transfer Credit)
7. Students are encouraged to contact EMU's Undergraduate Admissions before applying to EMU. To facilitate advising and the evaluation of transcripts, bring a copy of this articulation guide to all advising sessions.

**Effective Date: September 1, 2019 until 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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