

ELECTRICAL & COMPUTER ENGINEERING 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 13-4 WRTG 120 University Elective.....3-4

2. A course in English Composition or Communication

*ENGL 1190 or 1220 Communications 1 or Comp 13-4 WRTG 121 Composition II (pre-req for SET 350W).3-4

3. A course in Mathematics

* MATH 1760 Analytic Geometry & Calculus 14 MATH 120 Calculus I4

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

*CHEM 1170 General Chemistry 14 CHEM 121/122 General Chemistry I and Lab.....4

PHYS 1180 College Physics 15 PHY 221 University Elective5

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

Choose two from the approved MTA list.....6 University Elective6

6. Two courses in Social Sciences from different disciplines

ECON 1160 Principles of Economics 1.....3 ECON 201 University Elective3

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 Engineering3 ME 100 Intro to Engineering Design & Technology3

CHEM 1180 General Chemistry 24 CHEM 123/124 University Elective4

* MATH 1770 Analytic Geometry & Calculus 24 MATH 121 Calculus II.....4

* MATH 2000 Introduction to Linear Algebra.....3 MATH 122 Elem Linear Algebra3

* MATH 2760 Analytic Geometry & Calculus 34 MATH 223 Multivariable Calculus4

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

* PHYS 2220 Analytic Physics 15 PHY 223 Mechanics and Sound.....5

* PHYS 2230 Analytical Physics 25 PHY 224 Electricity & Light.....5

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

*ITCS 2590 Java 14 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 Electives8-11

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.

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.

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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
¹ 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.

¹ Satisfies EMU's Writing Intensive in the major requirement.

ARTICULATION AGREEMENT GUIDE

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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 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. 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 BS in Electrical & Computer Engineering program coordinator 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 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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