

ELECTRICAL AND COMPUTER ENGINEERING AGREEMENT GUIDE

Washtenaw Community College –Associate in Science in Pre-Engineering Science-Transfer
Eastern Michigan University – BS in Electrical and Computer Engineering

Washtenaw Community College Courses:**Eastern Michigan University Courses:****Michigan Transfer Agreement (MTA) Requirements (32 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 WCC. Students who started before fall semester 2014 may continue to follow the MACRAO Agreement until the end of summer semester 2019. [WCC courses approved for the MTA.](#)

1. A course in English Composition

*ENG 226 Composition II 3 WRTG 121 Comp II (pre-req for SET 350W) 3

2. A Second course in English Composition or Communication

COM 101 Fundamentals of Speaking 3 CTAC 124 University Elective 3

3. A course in Mathematics

* MTH 191 Calculus I 5 MATH 120 Calculus I (4)+1 5

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

* PHYS 211 Analytical Physics I 5 PHY 223 Mechanics and Sound 5

*CEM 111 General Chemistry I 4 CHEM 121 and 122 General Chemistry I 4

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

Choose from the approved MTA list 6 University Electives 6

6. Two courses in Social Sciences from different disciplines

Choose a from the approved MTA list 6 University Electives 6

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: Communication: COM 225; **Natural Science:** ENV 101, 105; **Humanities:** ART 143, 150; COM 225; DAN 180; DRA 180; ENG 181, 213, 214, 224, 242; HUM 150, 175, 221; MUS 180; **Social Science:** ANT 201; ECO 280; GEO 101; HST 109, 123, 150, 210, 230, 235, 240, 270; PLS 211; PSY 107, 251, 270; SOC 205, 206, 216.

These courses apply, but do not satisfy the MTA: CCP 251

WCC Pre-Engineering Program Requirements (29 credits)

Choose one from: CPS 141 or 171 4 COSC 000 or COSC 246 University Elective 4

*MTH 192 Calculus II 4 MATH 121 Calculus II 4

*MTH 293 Calculus III (Math Restricted Elective) 4 MATH 223 Multivariable Calculus 4

*MTH 295 Differential Equations (Math Restricted Elective) 4 MATH 325 Differential Equations (3)+1 4

*PHY 222 Analytical Physics II 5 PHYS 224 Electricity and Light 5

CEM 122 General Chemistry II 4 CHEM 123 and 124 Chemistry II University Elective 4

ENG 111 Composition I 4 WRTG 120 University Elective 4

EMU Requirements and Electives that may be taken at WCC or EMU (13-16 credits)

*CPS 161 An Introduction to Programming with Java 4 COSC 111/112 Introduction to Programming (3)+1 4

¹CPS 261 Adv Java Concepts (Computer Engr only) 4 COSC 211/212 Intro to Prgmng (3)+1(Comp Engr only) 4

*MTH 197 Linear Algebra 4 MATH 122 Elementary Linear Algebra (3)+1 4

Open Electives or Math/Science pre-requisites 4-5 University Electives 4-5

Credits at WCC: 74-77 Credits that transfer to EMU 74-77

*Required for EMU's Electrical and Computer Engineering program. If not transferred, must be completed at EMU.

¹ Required for EMU's Electrical and Computer Engineering program Computer Engineering Concentration.

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 Electrical and Computer Engineering Program at EMU

Major Requirements (47-50 credits)

Foundational Courses (9 credits)

CET 151	Intro to Computing in Engineering Tech	3
ME 100	Intro to Engineering Design & Manufacturing ..	3
¹ SET 350W	Engineering Communication	3

Electrical & Computer Engr Courses (29 credits)

EECE 212 or ELEC 212	Engineering Circuit Analysis.....	3
EECE 213	Engineering Circuit Analysis II.....	3
EECE 251	Digital Logic Design.....	3
EECE 341	Engineering Electronics I.....	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: Computer or Electrical (9 - 12 credits)

Computer Engineering (9 credits)

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

Electrical Engineering (12 credits)

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

LBC Requirement (0-3 credits)

Students must complete one Learning Beyond the Classroom course or noncredit experience offered by EMU. Consult your advisor for options. ²EECE 3857L4, ²386L4, or ²387L4 will apply toward this requirement.

Credits at EMU: 47-50

Transfer Credits: 74-77

Minimum Credits to Graduate: 124

Sample course sequence

This is a sample sequence only. Courses may not be offered every semester. Students will work with their advisor at EMU for a plan. ELEC 212 or EECE 212 must be taken in the winter before beginning the sequence of courses. Students may consider taking the course at EMU while finishing up the associate degree if they do not plan to transfer in the winter term.

Winter Semester (12 credits)

CET 151	F,W	3
EECE or ELEC 212 W,	pre-req PHY 224	3
ME 100	W, pre-req MATH 120.....	3
SET 350W	pre-req WRTG 121	3

Fall Semester (9 credits)

EECE 213	F, pre-req MATH 325.....	3
EECE 251	F, pre-req COSC 111.....	3
EECE 341	F, pre-req PHY 223, MATH 120, 121, COSC 111, and EECE 212 or ELEC 212).....	3

Additional Semesters (26-29 credits)

Concentration Courses.....	9-12	
EECE 351	pre-req: minimum grade of "C" in EECE 251 .. 3	
EECE 371	pre-req: minimum grade of "C" in EECE 213 .. 3	
EECE 400	pre-req EECE or ELEC 212, EECE 213, 251, 341, 351, 371, 421)	2
EECE 421	pre-req: minimum grade of "C" in EECE 371 .. 3	
EECE 430	pre-req: minimum grade of "C" in EECE 341 .. 3	
EECE 480	pre-req: EECE 212, 213, 251, 341, 351, 371, 400, 421,	3

¹ Satisfies EMU's Writing Intensive requirement.

² Satisfies EMU's Learning Beyond the Classroom requirement.

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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. WCC courses indicated with an * are required for EMU's BS in Electrical and Computer 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. Students who enrolled in college prior to fall semester 2014 will have until the end of summer semester 2019 to complete the MACRAO agreement. 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 or (9 hours in the major and 6 hours in the minor), 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. WCC students will receive equal consideration with other students for course registration and financial aid.
6. Students are encouraged to contact EMU's Electrical and Computer Engineering program coordinator before applying to EMU. To facilitate advising and the evaluation of transcripts, [sign up for this articulation agreement using this link](#), and bring a copy of this articulation guide to all advising sessions.

Effective Dates: September 1, 2018 until August 31, 2021.

This agreement is consistent with the 2018-2019 catalog. Students have until Summer 2026 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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