ELECTRICAL & COMPUTER ENGINEERING ARTICULATION GUIDE

Washtenaw Community College – **AS 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 (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. <u>Courses listed below for the MTA also satisfy program requirements at EMU and/or WCC.</u> For WCC 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 111 Composition I..4	WRTG 121 Composition II (3)+1 (Prereq for SET 350W) 4

2. A course in English Composition or Communication

ENG 226 Composition II...3	WRTG 225 Writing in the Disciplines 3

3. A course in Mathematics

1* MTH 191 Calculus I..5	MATH 120 Calculus I...5

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

*CEM 111 General Chemistry I 4	CHEM 121/122 Chemistry I..4
1* PHY 211 Analytical 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 two from the approved MTA list 6	General Transfer Credit……………….....................................6

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 <u>one</u> 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; FLM 150, 221; HUM 175; MUS 180; **Social Science:** ANT 201; ECO 280; GEO 101; HST 108, 109, 123, 150, 230, 235; PSY 251; SOC 205. ***These courses apply, but do <u>not</u> satisfy the MTA:*** CCP 251

WCC Program Requirements (28 credits)

CEM 122 General Chemistry II...4	CHEM 123/124 General Chemistry II 4
COM 101 Fundamentals of Speaking 3	COMM 124 Foundations of Speech Communication 3
1* 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	PHY 224 Electricity and Light..5
Choose one from: CPS 141 or CPS 171................................4	IT 145 or COSC 246 General Transfer Credit 4

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

*CPS 161 An Introduction to Programming with Java...........4	COSC 111/112 Introduction to Programming (3)+1 4
*MTH 197 Linear Algebra 4	MATH 122 Elementary Linear Algebra (3)+1.......................4
Open Electives 5	General Transfer Credit...5

Credits at WCC:...74	Credits that transfer to EMU.........................74

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

1 Indicates program admission requirement. See page 3 of the guide for details on program admission.

<u>Sign up with us:</u> 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

Major Requirements   (50 credits)

Foundational Requirements (6 credits)

EECE 100	Intro to Electrical & Computer Engineering	3
SET 350W	Engineering Communication	3

Electrical and Computer Engineering Requirements (38 credits)

EECE 212	Engineering Circuit Analysis	3
EECE 213	Engineering Circuit Analysis II	3
EECE 251	Digital Logic Design	3
EECE 262	Engineering Algorithmic Constructions	3
EECE 341	Engineering Electronics	3
EECE 351	Microcontrollers	3
EECE 369	Introduction to Engineering Analysis Methods	3
EECE 371	Signals and Systems	3
EECE 380	Electric Circuit and Design Lab	3
EECE 400	EECE Professional Practice	2
EECE 421	Control Systems Engineering	3
EECE 430	Power Electronics	3
EECE 480	Senior Capstone	3

Restricted Electives (6 credits) Choose 2 below:

EECE 342	Engineering Electronics II	3
EECE 352	Digital Systems Designs with HDL	3
EECE 365	Engineering Electromagnetics	3
EECE 372	Communication Systems	3
EECE 411	Machine Learning	3
EECE 431	Digital Control Systems	3
EECE 435	Internet of Things	3
EECE 441	Introduction to Digital Signal Processing	3
EECE 452	Advanced Digital System Design with FPGA	3

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: 50
Transfer Credits: 74
Total Credits: 124

This is a sample sequence only. Courses may not be offered every semester. Students will work with their advisor at EMU for a plan. 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   (9 credits)

EECE 100	F,W	3
EECE 212	F,W, prereq MATH 121, PHY 223	3
EECE 251	W, prereq: EECE 100	3

Fall Semester   (12 credits)

EECE 213	F, prereq: EECE 212	3
EECE 262	F, prereq: COSC 111	3
EECE 341	F, prereq: EECE 212	3
SET 350W	prereq WRTG 121	3

Winter Semester   (12 credits)

EECE 351	W, prereq: min grade of "C" in EECE 251	3
EECE 371	W, prereq: MATH 325 and EECE 212	3
EECE 369	W, prereq: MATH 121 and EECE 341	3
EECE 380	W, prereq: EECE 213 and EECE 341	3

Fall Semester   (9 credits)

EECE 421	F, pre-req: min grade of "C" in EECE 371	3
EECE 430	F, pre-req: min grade of "C" in EECE 341	3
Restricted Elective		3

Winter Semester   (8 credits)

EECE 400	W, pre-req EECE 212, 213, 251, 341, 351, 371	2
EECE 480	W, pre-req: EECE 212, 213, 251, 341, 351, 371, 421	3
Restricted Elective		3

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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 transferable 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. 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. WCC students will receive equal consideration with other students for course registration and financial aid.

6. Program Admission: 1) Combined transfer GPA of 2.5; 2) Completion of PHY 223, MATH 120, MATH 121, and EECE 212 with a grade of C or higher.
   Application Process:1) Submit an application online by October 1, February 1, or July 1. 2) Mandatory meeting with the Electrical and Computer Engineering faculty. Students will be notified of the decision by the end of the semester in which they applied.

7. Students are encouraged to contact EMU's BS in Electrical and Computer Engineering college advising center 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:

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