

ELECTRICAL AND COMPUTER ENGINEERING ARTICULATION AGREEMENT GUIDE – **ARCHIVED**

Oakland Community College –Associate in Science

Eastern Michigan University – BS in Electrical and Computer Engineering

Oakland Community College Courses: Transfer to Eastern Michigan University as:

Michigan Transfer Agreement (MTA) Requirements (31 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 OCC. Information on courses that apply to the MTA can be found on [OCC's website](#). Students who do not receive the MTA or MACRAO endorsement will be required to complete EMU's general education program for transfer students.

1. A course in English Composition

ENG 1510 Composition I.....	3	WRTG 120 University Elective	3
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2. A Second course in English Composition or Communication

* ENG 1520 Composition II.....	3	WRTG 121 Composition II (pre-req for SET 350W)	3
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3. A course in Mathematics

1* MAT 1730 Calculus I.....	4	MATH 120 Calculus I.....	4
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4. Two courses in Natural Sciences from different disciplines (one lab required)

* CHE 1510 General Chemistry I.....	4	CHEM 121/122 General Chemistry I.....	4
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1* PHY 2400 Engineering Physics I.....	5	PHY 223 Mechanics and Sound	5
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5. Two courses in Humanities and Fine Arts from different disciplines

Choose from the approved MTA list.....	6	University Elective	6
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6. Two courses in Social Sciences from different disciplines

Choose a from the approved MTA list.....	6	University Elective	6
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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 2290; **Natural Science:** BIO 1500; **Humanities:** ENG 1610, 2530, 2540, 2570; HIS 1520; MUS 1585; **Social Sciences:** ANT 1540; GEO 1520; HIS 1520, 1550, 2620; POL 2530, 2610; SOC 2620

These courses apply, but do not satisfy the MTA: BUS 2150; PSY 2730; SOC 2530; BIO 1512; SOC 2560

OCC Associate in Science Program Requirements (30 credits)

1* MAT 1740 Calculus II.....	4	MATH 121 Calculus II.....	4
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* MAT 2740 Calculus III.....	4	MATH 223 Multivariable Calculus.....	4
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* MAT 2880 Linear Algebra.....	4	MATH 122 Elementary Linear Algebra (3)+1.....	4
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* MAT 2810 Differential Equations.....	4	MATH 325 Differential Equations (3)+1.....	4
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* EGR 1100 Introduction to Engineering.....	3	ET 100 <u>sub for ME 100</u>	3
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1* PHY 2500 Engineering Physics II.....	5	PHY 224 Electricity and Light.....	5
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Choose additional science course(s) approved for AS.....	6	University Elective	6
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EMU Requirements and Electives that may be taken at OCC or EMU (16 credits)

* CIS 2353 Data Structures (Computer Engr Only).....	0-4	COSC 211/212 Programming Data Structures.....	0-4
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* Choose one from the following:.....	4	COSC 111/112 Introduction to Programming.....	4
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CIS 1500 Introduction to Programming (Java)			
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CIS 2151 Object Oriented Programming (Java)			
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CIS 2252 Object Orientated Programing (C++)			
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CIS 2757 C# Programming			
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Open Electives.....	8-12	University Electives	8-12
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Credits at OCC:.....77 Credits that apply to EMU's program..... 77

* Required for the Electrical and Computer Engineering program at EMU. Must be taken at EMU if not completed prior to transferring.

¹ Admission requirement for the Electrical and Computer Engineering program at EMU. See page 3 of guide for all admission requirements.

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

Major Requirements (44-47 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)

² 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

University Elective (0-3 credits)

Students must complete 47 credits at EMU under this agreement unless otherwise approved by the department head.

LBC Requirement

Students must complete one Learning Beyond the Classroom course or noncredit experience offered by EMU.

Credits at EMU: 47

Transfer Credits: 77

Total Credits: 124

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

² Program admissions requirement, must complete with a C or above.

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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. OCC courses indicated with an * are required for EMU's 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. 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. OCC students will receive equal consideration with other students for course registration and financial aid.
Admission to the Electrical and Computer Engineering Program
 - A minimum cumulative GPA of a 2.5 from EMU or cumulative from all college credit transferred in.
 - Completion of PHY 224, MATH 120, MATH 121, and EECE 212 with a grade of a C or above (or equivalent transfer credit.)
6. Students are encouraged to contact the College of Engineering and Technology Student Services 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 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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Eastern Michigan University

College of Engineering & Technology Student Services

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