

ELECTRICAL & COMPUTER ENGINEERING ARTICULATION GUIDE

Henry Ford College – AAS in Pre-Engineering: Electrical/Computer

Eastern Michigan University – BS in Electrical and Computer Engineering

Henry Ford 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.

Courses listed below for the MTA also satisfy program requirements at EMU and/or HFC. For HFC approved MTA courses go to [HFC's website](#). Students without an MTA or MACRAO endorsement must complete EMU's general education program.

1. A course in English Composition

ENG 131 Introduction to College Writing.....	3	WRTG 120 General Transfer Credit	3
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2. A Second course in English Composition or Communication

ENG 135 Business and Technical Writing and Research	3	WRTG 121 Composition II (GEEC).....	3
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3. A course in Mathematics

¹ * MATH 180 Calculus I.....	5	MATH 120 Calculus I (4)+1 (GEQR)	5
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4. Two courses in Natural Sciences from different disciplines (one lab required)

¹ * PHYS 231 Engineering Physics I	5	PHY 223 Mechanics and Sound (GEKN)	5
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*CHEM 141 Principles of General and Inorganic Chemistry .5		CHEM 121/122 General Chemistry I (4)+1 (GEKN).....	5
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5. Two courses in Humanities and Fine Arts from different disciplines

Choose from the approved MTA list	6	General Transfer Credit	6
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6. Two courses in Social Sciences from different disciplines

Choose one from: BEC 151 or 152.....	3	ECON 201 or 202 General Transfer Credit.....	3
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Choose a from the approved MTA list	3	General Transfer Credit	3
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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:

These courses also satisfy an MTA area: **Natural Science:** BIO 138 (non-lab); **Humanities:** ART 224, 225, 226, 227; ENG 243, 248; PHIL 201; WR 233, 236, 241; **Social Science:** ANTH 131, 151, 152, 154; EDU 296; GEOG 132; HIST 113, 261; POLS 152; SOC 152, 251. **This course applies, but does not satisfy the MTA:** ART 229, BBA 250; LGL 248; PLGL 248

HFC Pre-Engineering: Electrical/Computer Program Requirements (31 credits)

ENGR 125 Introduction to Computation for Engineering ...	3	CEET 151 Intro Computing in Engineering Tech	3
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* ENGR 130 Introduction to Engineering.....	3	ME 100 General Transfer Credit <u>sub for EECE 100</u> ...	3
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¹ *ENGR 240 Circuits	5	EECE 212 Engineering Circuit Analysis (3)+2	5
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¹ *MATH 183 Calculus II.....	5	MATH 121 Calculus II (4)+1	5
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* MATH 280 Calculus III.....	5	MATH 223 Multivariable Calculus (4)+1	5
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* MATH 288 Differential Equations	5	MATH 325 Differential Equations (3)+2.....	5
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* PHYS 232 Engineering Physics II	5	PHYS 224 Electricity and Light	5
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EMU Requirements and Electives that may be taken at HFC or EMU (14 credits)

* CIS 170 C Programming	3	COSC 000 General Transfer Credit <u>sub for COSC 111</u>	3
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* ENGR 205 Digital Systems.....	4	EECE 000 General Trans Credit <u>sub for EECE 251 (3)+1</u> .	4
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* MATH 275 Discrete Mathematics	4	MATH 205 General Trans Credit <u>sub for EECE 262 (3)+1</u> .	4
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* MATH 283 Linear Algebra	3	MATH 122 Elementary Linear Algebra.....	3
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Credits at HFC:	78	Credits that apply to EMU's program	78
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* 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 at EMU****Major Requirements (45 credits)****Electrical and Computer Engineering Requirements
(32 credits)**

EECE 213	Engineering Circuit Analysis II	3
EECE 341	Engineering Electronics I	3
EECE 351	Microcontrollers	3
EECE 369	Intro 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
EECE 481W	Senior Capstone II.....	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	Adv 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.

Technical Electives (7 credits)

Students must complete a minimum of 45 credits at EMU under this agreement. See faculty advisor for recommended courses if additional courses are needed at EMU to meet the minimum of 45 credits.

Credits at EMU:45**Transfer Credits:78****Total Credits:.....123**

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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. HFC 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 45 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 120 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. HFC students will receive equal consideration with other students for course registration and financial aid.

Admissions Requirements

- Minimum EMU cumulative GPA of 2.5 (or a combined GPA from all transfer institutions).
 - Completion of PHY 223 (PHYS 231), MATH 120 (MATH 180), MATH 121 (MATH 183), and EECE 212 (ENGR 240), with a grade of C or above. [See catalog for additional information.](#)
6. Students are encouraged to contact EMU's Undergraduate Admissions Office 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, 2023 until August 31, 2026.

This is a renewal of an agreement made in September 2019. This agreement is consistent with the 2023-2024 catalog. Students have until summer 2031 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:

Henry Ford College
Hassan Nameghi, PhD
Faculty Chair – Engineering
313.317.1746
hnameghi@hfcc.edu
HFC Advising
313.317.6845
advising@hfcc.edu

Eastern Michigan University
Undergraduate Admissions
Student Center, Suite 220
734.487.6453
transfer_admissions@emich.edu
[Schedule an appointment](#)