

**Henry Ford College – Associate in Science or Associate in General Studies**  
**Eastern Michigan University – Bachelor of Science in Computer Science Comprehensive Curriculum**

<b>Henry Ford College Courses:</b>	<b>Transfer to Eastern Michigan University:</b>
<b>Michigan Transfer Agreement (MTA) Requirements (30-32 credits)</b>	
Students with an 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 will also satisfy degree or program requirements at Henry Ford College or EMU.</u> Students who started before fall 2014 may continue to follow the MACRAO Agreement until the end of August 2019. For courses approved to satisfy the MTA go to <a href="https://www.hfcc.edu/registration-and-records/mta/hfc-agreement">https://www.hfcc.edu/registration-and-records/mta/hfc-agreement</a> .	
1. <b>A course in English Composition</b> ENG 131 Intro to College Writing.....3	University elective ..... 3
2. <b>A second course in English Composition or Communication</b> Choose from the approved MTA list .....3	University elective ..... 3
3. <b>A course in Mathematics</b> <sup>1</sup> MATH 115 College Algebra.....4	MATH 105 College Algebra (3)+1..... 4
4. <b>Two courses in Natural Sciences from different disciplines (one lab required)</b> * Complete the first course in a science sequence: .....4-5 BIO 152 (4), CHEM 141 (5), PHYS 231 (5) * Complete a course from a different science discipline.....4-5 Course must be intended for majors in the discipline BIO 152 (4), CHEM 141 (5), PHYS 231 (5)	First course of required science sequence:..... 4-5 BIO 110/111 (4), CHEM 121/122 (4)+1, PHY 223 (5) Required science course from a different discipline..... 4-5 BIO 110/111, CHEM 121/122, ESSC 110, or PHY 223
5. <b>Two courses in Humanities from different disciplines</b> Choose from the approved MTA list .....6	University electives ..... 6
6. <b>Two courses in Social Sciences from different disciplines</b> Choose from the approved MTA list .....6	University electives ..... 6
7. <b>If needed, complete an additional course in any the above categories to meet the 30 credit minimum for the MTA.</b>	
<b>EMU's Perspectives on a Diverse World requirement: Complete <u>one</u> course from the following list:</b> <b>Courses on this list will satisfy an MTA area above: Humanities:</b> ART 224, 225, 226, 227; ENG 243, 248; WR 233, 236; <b>Social Science:</b> ANTH 131, 151, 152, 154; GEOG 132; HIST 113, 243, 252, 261; POLS 152; SOC 152, or 251; WR 233, 236	
CIS 170 "C" Programming (prerequisite for CIS 171) .....3 * CIS 171 Java Programming.....3 * CIS 271 Advanced Java.....4 * Complete one course:.....3-4 CIS 122 Web Internet Tech (3) or CIS 126 XHTML/CSS Web Programming (4) <sup>3</sup> MATH 175 Precalculus (prerequisite for MATH 180) .....5 * MATH 180 Calculus I (prerequisite for CIS 170).....5 * Complete the second course in a science sequence.....4-5 BIO 150 Biology: Organisms, Genes, Ecology (4) CHEM 142 Prin Gen & Inorganic Chemistry II (5) PHY 232 Engineering Physics cont.(5) Satisfy the Wellness Group Requirement.....2-3 Choose from: COUN 114, HPE 140, 142, 153, 260; HPEA 117, 217, 126, or 155	COSC 000 University Elective ..... 3 COSC 111 Introduction to Programming ..... 3 COSC 211 Programming Data Structures (3)+1 ..... 4 COSC 231 Internet Based Computing (3) ..... 3-4 MATH 112 Topics in Precalculus (4)+1 ..... 5 MATH 120 Calculus I (4) +1 ..... 5 One course: Science Requirement ..... 4-5 BIO 120 Introductory Biology II (5)-1 CHEM 123/124 Gen Chemistry II w/lab (4)+1 PHY 224 Electricity and Light (5) University Elective ..... 2-3
<b>EMU Requirements that May be Taken at HFCC or EMU (19-22 credits)</b>	
* MATH 183 Calculus II.....5 * MATH 283 Linear Algebra.....3 * MATH 275 Discrete Mathematics.....4 * Complete another science course (may be for non-majors).....3-5 Choose from biology, chemistry, physics or psychology Open Electives (not to exceed 82-85 credits at HFCC).....0-3	MATH 121 Calculus II (4) +1 ..... 5 MATH 122 Elementary Linear Algebra ..... 3 MATH 205 Mathematical Structures..... 4 One course ..... 3-5 BIO, CHEM,PHY, or PSY (not ESSC) University Elective ..... 0-3
<b>Maximum Credits at HFCC:.....82-85</b>	<b>Maximum Credits that transfer to EMU. 82-85</b>

\*Required for EMU's Comprehensive Computer Science Curriculum

<sup>1</sup> Prerequisite for MATH 175 and MATH 180. If students initially place into Precalculus or Calculus I, College Algebra is not required.

NOTE: To satisfy the Associate in Science degree requirements, at least 24 hours of math and science coursework must be completed.

**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 EMU's**

**Computer Science**

**Comprehensive Computer Science (36 credits)**

COSC 221	Computer Organization I.....	3
COSC 311	Algorithms and Data Structures.....	3
COSC 314	Computational Discrete Structures.....	3
COSC 321	Computer Organization II.....	3
COSC 341	Programming Languages.....	3
COSC 423	Computer Operating Systems.....	3
COSC 439	Computing Network Principles.....	3
COSC 444	Foundations of Automata and Languages.....	3
COSC 471	Database Principles.....	3
COSC 481W	Software Engineering and Senior Project.....	3
Restricted Elective Courses.....		6

Any 400-level computer science courses not already taken or select two from the list of courses below:

- COSC 315 Symbolic computing (3)
- COSC 374 Applied Cryptography (3)
- COSC 405 Switching Theory (3)
- COSC 421 Systems Programming (3)
- COSC 422 Intro to Microprocessors (3)
- COSC 436 Web Programming (3)
- COSC 445 Compiler Construction (3)
- COSC 456 Computer Graphics (3)
- COSC 457 Computer Game Programming (3)
- COSC 461 Heuristic Programming (3)

**Mathematics Requirements (3 credits)**

MATH 360	Statistical Methods.....	3
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**Additional Requirement (0-3 credits)**

Students must complete one Learning Beyond the Classroom experience or course offered by EMU. Consult computer science advisor for options.

**Minimum Credits at EMU:..... 39-42**

**Minimum Credits to Graduate:..... 124**

Suggested Sequence for completing this program:

**Fall Semester (12 credits)**

COSC 221	Computer Organization I.....	3
COSC 314	Computational Discrete Structures.....	3
MATH 360	Statistical Methods.....	3
Restricted Elective.....		3

**Winter Semester (9 credits)**

COSC 311	Algorithms and Data Structures.....	3
COSC 321	Computer Organization II.....	3
COSC 341	Programming Languages.....	3

**Fall Semester (9 credits)**

COSC 439	Computing Network Principles.....	3
COSC 444	Foundations of Automata and Languages.....	3
COSC 481WI	Software Engineering and Senior Project.....	3

**Winter Semester (9-12 credits)**

COSC 423	Computer Operating Systems.....	3
COSC 471	Database Principles.....	3
Restricted Elective.....		3
LBC Requirement.....		0-3

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**Additional information:**

1. In completing the coordinated program of study for this articulation agreement, course substitutions may be made with the guidance of the advisors (indicated below) at both institutions to assure that all requirements are satisfied. Courses indicated with an \* are required for EMU's Program.
2. Students whose transcripts are endorsed as "MACRAO Satisfied" will only be required to meet EMU's additional three general education requirements, noted on the articulation guide and listed below. These requirements may be completed at the most appropriate time for the student whether before or after enrollment at EMU.
  - a) An approved course in Quantitative Reasoning: [at HFCC MATH 115, 141, 150, 153, 175, or 180] or [at EMU MATH 110 or if Intermediate Algebra is completed with a 2.0 or better, COSC 106; MATH 105, 118, 119, 120,140,170; PHIL 181; PLSC 210; SOCL 250; or STS 224]
  - b) an approved course in Global Awareness or US Diversity: [**Humanities:** ART224; ENG243, 248; WR131, 233; **Social Science:** ANTH131, 152, 154; GEOG132; HIST112, 113, 225, 255, 257; POLS152; SOC152, 251at HFCC]
  - c) an approved Learning Beyond the Classroom course or experience offered by EMU: [See EMU advisor]

*To use MACRAO, students must request that an official community college transcript, with the "MACRAO Satisfied" stamp, be sent to EMU's Admissions Office. Students who don't have "MACRAO Satisfied" on their community college transcript will be required to satisfy EMU's general education requirements as listed in the Undergraduate Catalog. The MACRAO stamp may be completed after admission to EMU, however, students should inform advisors at EMU that they intend to complete MACRAO, or they may be advised to complete additional courses for the general education program.*
3. Only courses with a grade of "C" or better (2.0 on a 4.0 scale) will be accepted for transfer to EMU.
4. Under this agreement, EMU will waive the 60-hour rule and require that a minimum of 46 credit hours must be completed at the four-year college level, of which 30 hours must be in courses offered by EMU, with 15 hours in program requirements, at the 300-level or above. Of the last 30 hours completed before graduating, at least 10 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. A minimum cumulative GPA of 2.0 is required for admission to EMU. Students must meet all admission requirements at the time of application for admission to EMU, including submitting transcripts from all previously attended colleges. HFCC students will receive equal consideration with other students for course registration and financial aid.
6. Students are encouraged to contact the Computer Science Program Coordinator early, before applying to EMU. To facilitate the evaluation of transcripts, students should indicate they are using this articulation agreement when applying to EMU and bring a copy of this guide to all advising sessions.

**Effective Dates: September 1, 2012 through August 31, 2015**

If this agreement is not renewed at the end of the effective period, students who already started this program will be given three additional years to be admitted to EMU under the terms of this agreement. Students who started the program prior to the effective date may use this agreement.

**Contacts:**

**Eastern Michigan University**  
Community College Relations  
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