

**ARCHIVED COMPUTER SCIENCE ARTICULATION AGREEMENT GUIDE**

Schoolcraft College – AAS in CIS: Programming

Eastern Michigan University – BS in Computer Science Major - Curriculum

**Schoolcraft College Courses:****Transfer to Eastern Michigan University:****Michigan Transfer Agreement (MTA) Requirements (30 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. Specific courses listed below for the MTA will also satisfy program requirements at Schoolcraft and/or EMU. For courses approved by Schoolcraft to satisfy the MTA go to [Schoolcraft's website](#). Students who do not have a MACRAO or MTA endorsement must complete EMU's general education program.

<b>1. A Course in English Composition</b>	
ENG 101 English Composition 1.....	3 University Elective.....
<b>2. A Second Course in English Composition or Communication</b>	
ENG 102 English Composition 2.....	3 University Elective.....
<b>3. A Course in Mathematics</b>	
* MATH 150 Calculus w/ Analytic Geom (in place of 126 or 113) ...	5 MATH 120 Calculus I (4)+1.....
<b>4. Two Natural Science courses from different disciplines (one lab required)</b>	
* Complete the first course in a science sequence: .....	4-5 First course of required science sequence:.....
BIOL 120 (4), CHEM 111 (4), or PHY 211 (5)	BIO 110/111, CHEM 121/122, or PHY 223
Choose one from the approved MTA list in a different discipline..	3-4 University Elective.....
<b>5. Two Humanities courses from different disciplines</b>	
COMA 103 Fundamentals of Speech .....	3 CTAC 124 Foundations of Speech Communication .....
Choose from the approved MTA list .....	3 University Elective.....
<b>6. Two Social Science courses from different disciplines</b>	
Choose one of the following: POLS 105; PSYCH 153 or 201 ..	3-4 University Electives .....
Choose from the approved MTA list .....	3 University Electives .....

**If needed, complete an additional course in any of the above categories to satisfy 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:** BIOL 104; GEOG 212; **Humanities:** ENG 170, 275; HIST 138; HUM 150, 201, 202, 203, 204; **Social Sciences:** ANTH 112, 201, 214; GEOG 133; HIST 138; POLS 207, 209; SOC 210

**These courses apply, but do not satisfy the MTA:** BUS 240; CCD 217; EDUC 200; SPE 100

**Schoolcraft AAS in CIS: Programming Requirements (43-44 credits)**

CIS 115 Introduction to Computer Based Systems.....	3 IS 215 Information Systems for Business.....	3
* CIS 129 Introduction to Programming Logic (3) and		
* CIS 290 Object-Oriented Programming w/Java (3).....	6 COSC 111/112 Intro to Computer Programming (4)+2.....	6
CIS 176 Visual Basic.NET .....	3 BMMT 000 University Elective .....	3
* CIS 211 Introduction to C++ (2) and		
* CIS 221 Advanced C++ (2).....	4 COSC 211/212 Programming Data Structures .....	4
CIS 225 Database Management Systems.....	3 IS 000 University Elective .....	3
* CIS 238 JavaScript (Program Elective).....	3 COSC 231 Internet Based Computing.....	3
CIS 250 Systems Development and Design.....	4 IS 000 University Elective .....	4
CIS 255 Introduction to Linux.....	3 IA 212 University Elective .....	3
CNT 115 Cybersecurity Fundamentals .....	3 ISAC 000 University Elective .....	3
Choose one of the following: CIS 170 or 178 .....	3 BMMT 000 University Elective .....	3
Choose 8-9 credits from the following: .....	8-9 University Electives .....	8-9
CIS 120, 122, 171, 185, 223, 251		

**EMU Requirements that May be Taken at Schoolcraft or EMU (13-15 credits)**

* Choose two courses from the following .....	9-10 Additional MATH/STAT Courses.....	9-10
MATH 151 Calculus with Analytic Geometry 2 (3)	MATH 121 Calculus II	
MATH 230 Linear Algebra (4)	MATH 122 Elementary Linear Algebra	
MATH 240 Calculus with Analytic Geometry 3 (5)	MATH 223 Multivariable Calculus	
* Complete second course in science sequence started above:.....	4-5 Second course of required science sequence:.....	4-5
BIO 130 (4), CHEM 117 (4), or PHY 212 (5)	BIO 120/121, CHEM 123/124, or PHY 224	

**Credits at Schoolcraft: ..... 86-89 Credits that transfer to EMU ..... 86-89**

\* This course is required for EMU's Computer Science major - Curriculum.

**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****BS in Computer Science - Curriculum****Major Requirements (49 credits)****Mathematics Requirements (3 credits)**

STAT 360 Statistical Methods ..... 3

**Required Computer Science Courses (26 credits)**

COSC 221 Computer Organization I ..... 3

COSC 311 Algorithms and Data Structures..... 4

COSC 314 Computational Discrete Structures..... 4

COSC 321 Computer Organization II ..... 4

COSC 341 Programming Languages ..... 4

COSC 381 Software Engineering Solutions ..... 4

COSC 481W Software Engineering and Senior Project..... 3

**Restricted Elective Courses (20 credits)**

Five courses from the following: .....20

A minimum of two courses must be from List A and the remaining courses may be selected from either list.

## List A

COSC 423 Computer Operating Systems  
 COSC 439 Computing Network Principles  
 COSC 444 Found of Automata & Languages  
 COSC 471 Database Principles

## List B

COSC 374 Applied Cryptography  
 COSC 411 Algorithm Design & Analysis  
 COSC 421 Systems Programming  
 COSC 422 Intro to Microprocessors  
 COSC 426 Software Dvlpmnt for Mobile Devices  
 COSC 436 Web Programming  
 COSC 445 Compiler Construction  
 COSC 456 Computer Graphics  
 COSC 457 Computer Game Programming  
 COSC 461 Heuristic Programming  
 COSC 462 Introduction to Information Retrieval  
 COSC 472 Big Data I  
 COSC 473 Big Data II  
 COSC 480 Special Topics (4)

**LBC Requirement**

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

**Minimum Credits at EMU:..... 49****Transfer Credits: ..... 86-89****Minimum Credits to Graduate:..... 120**

**ARCHIVED COMPUTER SCIENCE ARTICULATION AGREEMENT GUIDE**Schoolcraft College – **AAS in CIS: Programming**Eastern Michigan University – **BS in Computer Science – Applied, BS in Computer Science – Curriculum, or a BA in Computer Science****Additional information:**

1. Each institution will determine the satisfaction of their individual program and degree requirements. Both Schoolcraft and EMU agree to accept transferrable courses from each other and from other institutions. Schoolcraft courses indicated with an \* are required for EMU's BS in Computer Science or the BA in Computer Science. 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 with at least 30 hours in EMU courses, 15 hours of which must be in program requirements 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. Schoolcraft students will receive equal consideration with other students for course registration and financial aid.
6. Students are encouraged to contact EMU's Francine Parker 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 Dates: September 1, 2019 until 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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