

ARCHIVED FERMENTATION SCIENCE ARTICULATION GUIDE

Schoolcraft College–Certificate in Brewing and Distillation Technology
Eastern Michigan University – BS in Fermentation Science

Schoolcraft College Courses:**Eastern Michigan University Courses:****Michigan Transfer Agreement (MTA) Requirements (31-32 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 SC. For SC approved MTA courses go to [Schoolcraft's website](#).

| | | |
|---|-----|--|
| 1. A course in English Composition | | |
| Choose one from the approved MTA list | 3 | University Elective |
| 2. A course in English Composition or Communication | | |
| Choose one from the approved MTA list | 3 | University Elective |
| 3. A course in Mathematics | | |
| *Choose one course from below | 4-5 | Mathematics Requirement |
| MATH 150 Calculus with Analytic Geometry I (5) | | MATH 120 Calculus I (5) |
| MATH 122 Elementary Statistics (4) | | STAT 170 Elementary Statistics (3)+1 |
| 4. Two courses in Natural Sciences from different disciplines (one lab required) | | |
| *CHEM 111 General Chemistry I | 4 | CHEM 121/122 General Chemistry I |
| *BIOL 120 Principles of Biology I | 5 | BIO 110/111 Introductory Biology I |
| 5. Two courses in Humanities and Fine Arts from different disciplines | | |
| Choose two from the approved MTA list | 6 | University Elective |
| 6. Two courses in Social Sciences from different disciplines | | |
| Choose two from the approved MTA list | 6 | University Elective |

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:** 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; EDUC 200; SPE 100

Schoolcraft Brewing and Distillation Technology Program Requirements (24 credits)

| | | | |
|--|---|------------------------------------|---|
| ¹ BDT 101 Brewing Science | 4 | FERM 000 University Elective | 4 |
| ¹ BDT 110 Brewhouse Operations & Technology | 4 | FERM 000 University Elective | 4 |
| ¹ BDT 120 Beer Styles & Flavors | 2 | FERM 000 University Elective | 2 |
| ¹ BDT 140 Marketing & Operations Management | 2 | HRM 000 University Elective | 2 |
| ¹ BDT 210 Cellaring, Packaging & Quality Management | 4 | FERM 000 University Elective | 4 |
| ¹ BDT 220 Advanced Brewing and Distillation | 4 | FERM 000 University Elective | 4 |
| ¹ BDT 230 Beverage Management & Service | 4 | HRM 000 University Elective | 4 |

¹Students who successfully complete all of the courses listed above in the Schoolcraft Brewing and Distillation Certificate with a 2.0 or higher can use this agreement.

EMU Requirements and Electives that May be Taken at SC or EMU (31-32 credits)

| | | | |
|---|-------|---|-------|
| *CHEM 117 General Chemistry II and Qualitative Analysis | 5 | CHEM 123/124 General Chemistry II (4)+1 | 5 |
| *PHYS 181 General Physics I | 4 | PHY 221 Mechanics, Sound and Heat | 4 |
| Open Electives (not to exceed 90 total credits at SC) | 22-23 | University Electives | 22-23 |

Students may opt to take the Open Electives at EMU. Several fermentation science courses are available including: Introduction to Fermentation Science, Sensory Analysis of Fermented Products, Fermented Beverage Production, Fermentation in Food, Fermentation Production Facilities, Cooperative Education in Fermentation Science, Independent Study, Undergraduate Research in Fermentation Science.

Credits at SC:86-88 Credits that transfer to EMU 86-88

**Required for EMU's BS in Fermentation Science program. If not transferred, must be completed at EMU.*

¹Students who successfully complete all of the requirements for the SC Brewing and Distillation will be deemed to have "competency met" for for FERM 101 and the sets of restricted electives required for EMU's BS in Fermentation Science. Students can choose to enroll in FERM 101, 421, 425, 431 and/or 441 as open electives toward graduation.

***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 Fermentation Science Program**Major Requirements (32-34 credits)****Core Courses (6 credits)**

| | |
|--|----|
| FERM 385 Instrumental Analysis of Fermented Products | .3 |
| FERM 480 Capstone Seminar | 1 |
| ¹ FERM 485L4 Capstone Project/Internship | 2 |

Math and Science Requirements (26-28 credits)

| | |
|---|-----|
| ³ CHEM 270 Survey of Organic Chemistry | 4 |
| ³ CHEM 271 Organic Chemistry Laboratory | 1 |
| CHEM 283 Introduction to Analytical Chemistry | 2 |
| CHEM 284 Introduction to Analytical Chemistry Lab | 2 |
| One course from the following | 3-4 |
| CHEM 351 Foundations of Biochemistry (4) | |
| CHEM 451 Biochemistry (3) | |
| BIO 301 Genetics | 3 |
| BIO 305 Cell and Molecular Biology | 3 |
| BIO 425 General Microbiology | 5 |
| ² One course from the following for Writing Intensive Req. | 3-4 |
| BIO 306W Cell and Molecular Biology & Genetics Lab (4) | |
| CHEM 453W Biochemistry Lab (3) | |

Students who successfully complete all of the requirements for the SC Brewing and Distillation will be deemed to have "competency met" for FERM 101 and the sets of restricted electives required for EMU's BS in Fermentation Science. The following courses will be waived under this agreement: FERM 101, six hours from (FERM 421, 425, 431, 441; HRM 150), and 12 hours of restricted electives.

Minimum Credits at EMU:32-34
Maximum Transfer Credits:86-88
Minimum Credits to Graduate: 120

Sample Sequence for completing the program:

Courses may not be offered every semester. Consult the program advisor to develop a program of study.

First Semester (12 credits)

| | |
|--|---|
| CHEM 270 FWS, pre-reqs: CHEM 121 and 122 | 4 |
| CHEM 271 FWS, co-req: CHEM 270 | 1 |
| CHEM 283 FW, pre-reqs: CHEM 123/124 or 125/126; Level 5 math | 2 |
| CHEM 284 FW, pre-reqs: CHEM 123/124 or 125/126; Level 5 math | 2 |
| BIO 301 FWS, pre-reqs: BIO 110, 111, Level 5 math | 3 |

Second Semester (9-10 credits)

| | |
|---|-----|
| FERM 385 pre-reqs: CHEM 283/284, 270 or 372, 271 or 373 | 3 |
| BIO 305 FWS, pre-reqs: CHEM 123, 124 | 3 |
| CHEM 351 or 451 FWS, pre-reqs: CHEM 270 or 372 | 3-4 |

Third Semester (11-12 credits)

| | |
|--|-----|
| FERM 480 pre-req: FERM 385; co-req: FERM 485L4 | 1 |
| FERM 485 pre-req: FERM 385; co-req: FERM 480 | 2 |
| BIO 425 pre-reqs: BIO 301 and CHEM 270 or 372 | 5 |
| BIO 306W or CHEM 453W | 3-4 |

¹ Satisfies EMU's Learning Beyond the Classroom requirement.

² Satisfies EMU's Writing Intensive requirement.

³ CHEM 213 and 214 from Schoolcraft College will transfer in as CHEM 371/372/373. If CHEM 213 and 214 transfer to EMU, CHEM 270 and 271 will not be required to complete at EMU.

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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. SC courses indicated with an * are required for EMU's Fermentation Science 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 30 credit hours must be completed in EMU courses, with at least 15 hours in the program or (9 hours in the major and 6 hours in the minor), 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. SC students will receive equal consideration with other students for course registration and financial aid.
6. Students are encouraged to contact EMU's Fermentation Science program coordinator 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, 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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