

FERMENTATION SCIENCE - ACADEMIC CERTIFICATE (AC)

- **Program Code:** FERM.AC
- **Program Type:** Academic Transfer
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

Explore More About This Program: <https://cwi.edu/program/fermentation-science>

NOTE: Courses required for this program *may* have an additional fee; more information can be found on the [Special Course Fees](#) web page.

Certificate Quick Facts

- **Instructional School:** Science, Technology, and Math
- **Department:** Agricultural Sciences

Certificate Requirements

Course	Course Title	Min Credits
Major Requirements		
AGRI 290	Agricultural Science Capstone	2
BUSA 201	Business Communication and Professionalism	3
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Lab	1
CHEM 102	Essentials of Organic and Biochemistry	4
CHEM 102L	Essentials of Organic and Biochemistry Lab	1
FERM 110	Grapes and Hops: Specialty Crops	3
FERM 120	Introduction to Fermented Foods	3
MATH 147	Precalculus	5
MMBS 111	Introductory Microbiology	3
MMBS 111L	Introductory Microbiology Lab	1
Minimum Credit Hours Required		29

Certificate Plan

The course sequence listed below is strongly recommended in order to complete your program requirements. Please register for each semester as shown using the Student Planning tool in myCWI. Plans may be modified to fit the needs of part-time students by adding additional semesters. Consult your advisor for any questions regarding this course sequence plan.

First Year

Fall		Credit Hours
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Lab	1
FERM 120	Introduction to Fermented Foods	3
MATH 147	Precalculus	5
MMBS 111	Introductory Microbiology	3
MMBS 111L	Introductory Microbiology Lab	1
Total Semester Credit Hours		16
Spring		Credit Hours
AGRI 290	Agricultural Science Capstone	2
BUSA 201	Business Communication and Professionalism	3
CHEM 102	Essentials of Organic and Biochemistry	4
CHEM 102L	Essentials of Organic and Biochemistry Lab	1
FERM 110	Grapes and Hops: Specialty Crops	3
Total Semester Credit Hours		13
Minimum Credit Hours Required		29

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Possess knowledge and understanding of chemistry and microbiology as it relates to fermentation science.
- Use critical thinking and professional skills to explain scientific principles surrounding fermentation science.
- Understand the process of science and evidence-based approaches to address questions and evaluate problems within the fermentation industry.

Related Degree Plan: Fermentation Science Academic Certificate and STEM Associate of Science Degree

The course sequence listed below is strongly recommended in order to complete all of the requirements for multiple programs. Please register for each semester as shown using the Student Planning tool in myCWI. Consult your advisor for any questions regarding this course sequence plan.

The courses listed below are strongly recommended to facilitate the completion of requirements for both an Academic Certificate (AC) in Fermentation Science **and** an Associate of Science (AS) degree in Science, Engineering, Technology, and Math (STEM). The prerequisites that must be met prior to enrollment in the courses required for the AC have been accounted for; if students complete the courses listed here, they will be eligible to graduate with **both** an AC in Fermentation Science **and** an AS degree in STEM.

NOTE: If you would like to earn the STEM AS **without** the AC, please visit the [STEM AS](#) catalog page for a detailed list of requirements.

Course	Title	Credit Hours
First Year		
Fall		
CWI 101	Connecting With Ideas	3
CHEM 101	Introduction to Chemistry (GEM 4)	3
CHEM 101L	Introduction to Chemistry Lab (GEM 4)	1
ENGL 101	Writing and Rhetoric I (GEM 1)	3
MATH 147	Precalculus (GEM 3)	5
Total Semester Credit Hours		15
Spring		
ENGL 102	Writing and Rhetoric II (GEM 1)	3
FERM 120	Introduction to Fermented Foods (GEM 4)	3
MATH 170	Calculus I	5
GEM 2 - Oral Communication course ¹		2-3
GEM 5 - Humanistic & Artistic Ways of Knowing course		3
Total Semester Credit Hours		16
Second Year		
Fall		
CHEM 102	Essentials of Organic and Biochemistry	4
CHEM 102L	Essentials of Organic and Biochemistry Lab	1
FERM 110	Grapes and Hops: Specialty Crops	3
MMBS 111	Introductory Microbiology	3
MMBS 111L	Introductory Microbiology Lab	1
SCIE 102	Ethics in Science (GEM 6) ³	3
Total Semester Credit Hours		15
Spring		
AGRI 290	Agricultural Science Capstone ⁴	2
BUSA 201	Business Communication and Professionalism	3
GEM 5 - Humanistic & Artistic Ways of Knowing course ²		3
GEM 6 - Social & Behavioral Ways of Knowing course ²		3

Global Perspectives course	3
Total Semester Credit Hours	14
Minimum Credit Hours Required	60

- ¹ COMM 101 Fundamentals of Oral Communication is the recommended course to fulfill the GEM 2 requirement.
- ² Course must come from a different discipline.
- ³ This course fulfills the Ethical Reasoning requirement for an associate degree from CWI.
- ⁴ Students wishing to earn **both** the Fermentation Science AC **and** the STEM AS should complete AGRI 290 instead of SCIE 290 for their capstone course.