



MSUSM SCHOOL OF HOSPITALITY DENVER

Brewery Operations Major, B.S.

About the Program

Program Slogan: "Crafting Leaders in the Beer Industry!"

The Bachelor of Science in Brewery Operations is designed for students and professionals looking to break into or further their career within the competitive beer and brewing industry. Created for those wishing to have baccalaureate level training and for those looking to gain vital credentials and certifications, this degree will prepare them for the challenges they will face once they are employed in the beer world. Brewery professionals are involved in the operations, management, creation and analysis of beer in a brewery setting. The Bachelor of Science degree program in Brewery Operations provides a broad foundation in:

- 1) practical understanding and implementation of the brewing process, equipment, maintenance, and safety within the physical plant as well as through understanding and the ingredients of beer,
- 2) chemical and biological analysis and improvement of beer,
- 3) brewery management and operations,
- 4) serving and hospitality in the beer world,
- 5) packaging techniques,
- 6) draft quality and system design,
- 7) professional applications of theoretical knowledge.

The program is one of the only bachelor's degrees related specifically to beer and the brewing industry in the world.

It is particularly unique because it is an expansive course of study based out of the School of Hospitality, Events, and Tourism and is not exclusively a food science degree.

Student Outcomes

Develop a range of leadership skills and abilities to succeed in the beer industry, including resourceful and ethical decision making, team interaction skills, and critical & reflective thinking skills within the larger hospitality industry.

Implement beer production and distribution principles within the increasingly diverse beer industry environment.

Formulate and apply strategies and techniques to enhance abilities within the scientific and technical realm of the brewing industry.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements:

1. Degree and Certificate Requirements
2. General Studies Requirements
3. Ethnic Studies & Social Justice Graduation Requirement
4. Senior Experience Graduation Requirements

Program Requirements

- A total of 120 semester hours are required for graduation.
- A grade of C or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.
- A minor is not required for this program

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

1. Written Communication (6 credits)
2. Oral Communication (3 credits)
3. Quantitative Literacy (3 credits)
 - a. Recommended: MTH 1109 - College Algebra Stretch, Part II or MTH 1110 - College Algebra for Calculus or MTH 1111 - College Algebra for Calculus with Laboratory or MTH 1112 - College Algebra Through Modeling or MTH 1210 - Introduction to Statistics
4. Arts and Humanities (6 credits)
 - a. Recommended: PHI 3360 - Business Ethics (Required in the major)
 - i. Prerequisite(s): At least junior standing; ENG 1020
5. Historical (3 credits)
6. Natural and Physical Sciences (6 credits)
 - a. Recommended: Many courses in the Science requirement for the degree can fulfill this requirement.
7. Social and Behavioral Sciences (6 credits)
 - a. Recommended: ECO 2010 - Principles of Macroeconomics (Required in the major)
 - b. Recommended: ECO 2020 - Principles of Microeconomics (Required in the major)
8. Global Diversity (0 or 3 credits**)
 - a. Recommended: GEG 1910 - Global Water Concerns

** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.

- Many programs include courses that meet this requirement. Students should consult with their advisor to determine what program courses may fulfill this requirement.

Science Courses: 23 credits

1. BIO 1080 - General Biology I Credits: 3
 - a. Prerequisite(s): Minimum performance standard scores on reading, writing and mathematics preassessment placement tests
 - b. Corequisite(s): BIO 1090
2. BIO 1081 - General Biology II Credits: 3
 - a. Prerequisite(s): BIO 1080 and BIO 1090; or permission of instructor
 - b. Corequisite(s): BIO 1091
3. BIO 1090 - General Biology Laboratory I Credits: 1
 - a. Prerequisite(s): Minimum performance standard scores on reading, writing and mathematics preassessment placement tests
 - b. Corequisite(s): BIO 1080
4. BIO 1091 - General Biology Laboratory II Credits: 1
 - a. Prerequisite(s): BIO 1080 and BIO 1090; or permission of instructor
 - b. Corequisite(s): BIO 1081
5. BIO 2400 - General Microbiology Credits: 5
 - a. Prerequisite(s): BIO 1080 and BIO 1090, BIO 1081 and BIO 1091, one semester of college chemistry, or Permission of instructor
6. CHE 1100 - Principles of Chemistry Credits: 4
 - a. Prerequisite(s) or Corequisite(s): MTH 1109 or MTH 1110 or MTH 1111 or MTH 1112 or a College Level Math (CLM) score of greater than or equal to 65 on the Accuplacer Exam or an Advanced Algebra and Functions (AAF) score of greater than or equal to 280 on the Accuplacer Exam
7. CHE 1150 - Principles of Chemistry Laboratory Credits: 1
 - a. Prerequisite(s): Minimum performance standard scores on reading, writing, and mathematics preassessment placement tests.
 - b. Corequisite(s): CHE 1100
8. CHE 2100 - Introduction to Organic and Biological Chemistry Credits: 4
 - a. Prerequisite(s): CHE 1100 or CHE 1810
9. CHE 2150 - Introduction to Organic and Biological Chemistry Laboratory Credits: 1
 - a. Prerequisite(s): CHE 1150 or CHE 1811
 - b. Prerequisite(s) or Corequisite(s): CHE 2100

Major Core Courses: 42 credits

1. ACC 3120 - Financial Leadership for Hospitality Credits: 3
2. BVG 2350 - Brewery Mechanics Credits: 3
 - a. Prerequisite(s): MTH 1210
3. BVG 3010 - Beers of the World Credits: 3
 - a. Prerequisite(s): Students must be at least 21 years of age.
4. BVG 3350 - Brewery Operations Credits: 3

- a. Prerequisite(s): BVG 2350
- 5. BVG 3750 - Alcohol Beverage Law Credits: 3
- 6. BVG 3810 - Sensory Quality Analysis of Beer Credits: 3
- 7. BVG 4010 - Beer Styles and Service Credits: 3
 - a. Prerequisite(s): BVG 3010
- 8. BVG 4220 - Brewing Fermentation Credits: 3
 - a. Prerequisite(s): BIO 2400, BVG 3810
- 9. BVG 4350 - Brewing Science and Technology Credits: 3
 - a. Prerequisite(s): CHE 2100
- 10. BVG 4810 - Brewing Quality Analysis Credits: 3
 - a. Prerequisite(s): BVG 4350
 - b. Prerequisite(s) or Corequisite(s): BVG 4220
- 11. ECO 2010 - Principles of Macroeconomics Credits: 3
- 12. ECO 2020 - Principles of Microeconomics Credits: 3
- 13. HLDR 4000 - Cost Control for Hospitality and Tourism Credits: 3
 - a. Prerequisite(s): ACC 3120
- 14. PHI 3360 - Business Ethics Credits: 3
 - a. Prerequisite(s): At least junior standing; ENG 1020

Major Electives: 9 credits

Select 3 courses

- 1. BVG 3220 - Beer and Food Credits: 3
- 2. BVG 3500 - Hospitality Entrepreneurship Credits: 3
- 3. BVG 3683 - Beer and Spirits Credits: 3
- 4. BVG 3950 - Product and Service Promotion for Hospitality Credits: 3
- 5. HLDR 0370 - Study Abroad in Hospitality Credits: 0
- 6. HLDR 3200 - Talent Leadership Credits: 3
- 7. HLDR 3300 - Hospitality Marketing and Sales Credits: 3
- 8. HLDR 3400 - Facilities Operations Credits: 3
- 9. HLDR 3600 - Organizational Leadership for Hospitality Credits: 3
 - a. Prerequisite(s): HLDR 3200
- 10. HLDR 3980 - Internship in Hospitality Credits: 3
- 11. HLDR 4400 - Strategic Management for Hospitality Credits: 3
 - a. Prerequisite(s): HLDR 3300

Senior Experience: 3 credits

- 1. BVG 4850 - Applied Brewing Operations Credits: 3
 - a. Prerequisite(s): BVG 4220, BVG 3950, AAC 3120, HLDR 3200, BVG 4910, BVG 3350

Summary of Requirements

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

General Studies Requirements	33 credits
Ethnic Studies and Social Justice Requirement	0-3 credits
Science Courses	23 credits
Major Requirements	42 credits
Major Electives	9 credits
Senior Experience	3 credits
Unrestricted Electives	7-25 credits
Total for the Brewery Operations Major, B.S.	120 credits