



# Brewing Science Certificate Program

Coming May 2018!

[Click here to register](#)

Cost: \$4500 (includes all books and supplies)

Location: Harrisburg Campus

Dates: May 2018-February 2019

Courses include:

## **Course 1- Safety and Sanitation\***

Covers the principles of safe food-handling in the commercial foodservice environment. This course addresses the different types of microorganisms and toxins that may cause foodborne illnesses; the role that time and temperature controls play in the flow of food throughout the operation; the importance of proper food handling and adhering to food safety systems and procedures; and the various food allergens affecting people today. This course also covers sanitary facilities and pest management, as well as the importance of employee training. Current issues in food sanitation, along with the local, state, and federal regulations that apply, are also discussed. This course meets the Pennsylvania Department of Agriculture requirement for certified food handlers. The SERVSAFE examination of the National Restaurant Association is administered.

## **Course 2- Culinary Math**

Develops crucial math skills needed for success in food service and hotels. This course covers basic math essentials, and industry specific applications that include decimals, fractions, percentages, measurements, yields, and costing.

## **Course 3- Microbiology\***

This course not only educates students about the theory of fermentation management, but how to apply the lessons to real life in a brewery. We take a holistic approach and cover the biology and

chemistry of every aspect of brewing to ensure the students understand not only how to construct and brew recipes, but how the decisions are influenced by the biology of the ingredients and the process going in each contributing selection. By taking this approach our students will be able to troubleshoot any aspect of brewing issues and will allow them to create world class beer.

#### **Course 4- Off Flavor Webinar- Cicerone**

Cicerone in collaboration with Aroxa now offers an off-flavor kit that comes with access to support materials and a narrated webinar. Each kit contains flavor spikes for six common beer flaws, three that result from brewing and three that result from handling. The six flavors are: diacetyl, DMS, acetaldehyde, skunky, oxidized and infection.

#### **Course 5- Quality Control and Assurance in Brewing\***

In this course students will receive an overview of Quality Control (QC) and Quality Assurance (QA) techniques in both a classroom and through hands on learning. Students will study QC theory and tour local brewing facilities to see the continuum of QC and QA techniques used throughout the local brewing industry.

#### **Course 6- Foundations of Beer Making\***

The course will give students an overview of both the beer making process as well as the entire brewing industry. Students will begin to create the beer recipe that will ultimately become the #HACCbrew. Industry experts will instruct the course and brewing sanitation will be expanded on. The importance of brewing ingredients will also be a focus. These ingredients such as water, yeast, malt, malt, hops and more will be discussed in the classes located in both a HACC classrooms as well as in our partner breweries.

#### **Course 7- Principles of Brewing Engineering\***

This classroom based course will focus students in on key principles in beer makings such as equipment layout, waste water, and the overall brewing process. Other discussions will center around packaging and distribution, refrigeration and the key role water plays in the brewing process.

#### **Course 8- Current Trends in the Beer Industry\***

Material will cover current issues such as Supply Chain Management, Regulatory Compliance, and Safety. Additional topics covered will be marketing, front of the house operations and other trending topics in the Craft Beer Industry.

#### **Course 10- Cicerone Certification Level 1 Prep and Test**

#### **Course 11- Internship**

Students will complete a 80 hour internship. Schedules and locations will vary.

Please contact Holly Lukens at [hblukens@hacc.edu](mailto:hblukens@hacc.edu) or 717-780-1179 for more information.