Pathway to Recognition Program

Guidelines for a Two-Year Associate's Degree in Brewing or Fermentation Science

Two-year associate's degree programs offered by accredited academic institutions that endeavor to provide programs for brewing and/or fermentation sciences should

1. Prepare students for entry-level positions in either large-scale or craft-scale brewing or allied industries that can lead to a career in brewing, such as
   a. Brewer Technician
   b. Packaging Line Operator
   c. Sensory Quality Lab Technician
   d. Analytical Quality Lab Technician
   e. Packaging Quality Lab Technician

2. Provide students with an introductory body of knowledge, experience, and skill sets in the science of brewing/fermentation, defined as the "learning outcomes" (**See attached Learning Outcomes document**).

3. Require that the following minimum coursework levels be met by students prior to capstone courses in a brewing/fermentation science degree:
   a. Relevant prerequisites for all of the following subjects (**bold = essential**):
      i. **Biology**
      ii. **Chemistry**
      iii. **Microbiology**
      iv. Biochemistry
      v. Sensory Science
      vi. Chemical, Mechanical, Food Engineering
      vii. Food Science
      viii. Sustainability
   b. Academic institution should provide coursework to develop competency in
      i. Business communication skills in English
      ii. Critical thinking and problem solving
      iii. Relevant computer competency skills
      iv. Introductory business practices

4. It is strongly recommended that the program provide opportunities for students to attain at least 80 hours in an industry-related internship (brewery, industry laboratory, supplier facility), with the opportunity to focus on one or more "introduction to" skills, such as
   a. Brewhouse
   b. Quality Assurance Lab
   c. Brewery Automation
   d. CIP and Sanitation
   e. Packaging and Line Management
   f. Compliance
   g. Maintenance
   h. Raw Materials Procurement and Handling

5. Provide adequate facilities and methodologies and access to industry, such as
    a. Access to pilot-scale brewing and packaging equipment
    b. Access to industry-accepted instrumentation for performing key analytical quality measurements
    c. Exposure and access to one or more of the following industry-accepted Methods of Analysis:
        - ASBC (American Society of Brewing Chemists)
        - EBC (European Brewing Convention)
        - MEBAK (Mitteleuropäische Brautechnische Analysenkommision e.V.)
    d. Access to a library that includes multimedia resources and research technologies (e.g., databases, search engines, etc.) related to research in brewing and related industries
    e. Membership in MBAA, ASBC, etc. and access to institutional library subscriptions to journals such as *JIB*, *Technical Quarterly*, etc.

6. Employ a lead faculty member with a demonstrable level of expertise in a combination of the following:
    a. Five or more years in a leadership role in an operating brewery
    b. Five or more years as a faculty or postdoctoral scientist in an existing brewing or fermentation program at an established, accredited college or university, such as UC Davis, Oregon State, Weihenstephan, VLB, Heriot-Watt, Nottingham, etc.
    c. Five or more years as a faculty or postdoctoral scientist in a relevant science-based university department (e.g., chemistry, biochemistry, chemical engineering, microbiology) coupled with proven education qualifications in relevant and accepted brewing qualifications/courses, such as the Institute of Brewing and Distilling (IBD) Diploma in Brewing, the UC Davis Extension Master Brewers Program, or the Siebel Institute WBA Master Brewer Program
    d. If the lead faculty member does not have experience in a leadership role in an operational brewery, the program should establish a formalized relationship with an advising professional brewer

Programs are encouraged to provide students with additional opportunities to attain further evidence of competency by providing links to professional organizations such as the MBAA, ASBC, and others:

- MBAA (www.mbaa.com)
- ASBC (www.asbcnet.org)
- Siebel Institute (www.siebelinstitute.com)
- IBD Diploma in Brewing Exam (www.ibd.org.uk/qualifications/examinations)

Two-year programs offered by accredited colleges and universities that endeavor to provide associate degrees for brewing and/or fermentation sciences also may develop opportunities to serve the brewing industry by developing capabilities in

a. Laboratory analysis in brewing and raw materials
b. Research and product development in brewing science
c. Pilot brewing facilities for industry–academic projects