

2019 MBAA Brewing and Malting Science Course

University of Wisconsin | Madison, Wisconsin, U.S.A.

November 3 – 15, 2019

Course Directors: Toby Eppard, Ray Klimovitz, Steve Presley, Darren Goodlin,
Tom Eplett

Sunday, November 3 | Lowell Center

Course Director: Toby Eppard

All Day	Students pick up course information packets when checking in at the front desk
6:00 PM – 6:45 PM	Welcome Reception in Hospitality Room – Mendota Room Lowell Center
7:00 PM – 8:30 PM	Dinner – Lowell Center Dining Room Course Introduction and Lowell Center Information <i>Toby Eppard, Course Director</i>

Monday, November 4 | Pyle Center Room 335

Course Director: Toby Eppard

8:00 AM – 8:30 AM	Team Assignments, Case Studies, and Student Introductions <i>Toby Eppard, Course Director</i>
8:30 AM – 10:15 AM	Life Sciences for Brewers <i>Jon Roll, University of Wisconsin, Department of Bacteriology</i>
10:15 AM – 12:00 PM	Malting Barley: Origins, Production, and Quality <i>Scott Heisel, American Malting Barley Association</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 3:00 PM	Malting and Malt Plant Operations <i>Joseph Hertrich, Anheuser-Busch (retired)</i>
3:15 PM – 4:30 PM	Malt Analyses: Measurements and Functionality <i>Joseph Hertrich, Anheuser-Busch (retired)</i>
4:30 PM – 5:00 PM	Malting Industry Overview <i>Joseph Hertrich, Anheuser-Busch (retired)</i>
5:00 PM – 6:00 PM	Tour: UW-Madison Pilot Brewhouse and Campus (optional) <i>Jon Roll, University of Wisconsin, Department of Bacteriology</i>

Tuesday, November 5 | Pyle Center Room 335

Course Director: Toby Eppard

8:00 AM – 9:00 AM	Brewing Adjuncts <i>Scott Helstad, Cargill Sweeteners North America</i>
9:10 AM – 10:25 AM	Specialty Malts <i>Dan Bies, Briess Malt & Ingredients</i>
10:30 AM – 10:45 AM	Load onto Bus at Pyle Center (box lunches on the bus)
10:45 AM – 1:15 PM	Bus Trip to Manitowoc, WI for Briess Malthouse Tour
1:30 PM – 3:00 PM	Tour of Briess Manitowoc Malthouse
3:00 PM – 4:00 PM	Q&A and Refreshments at the Briess Malthouse
4:15 PM – 6:30 PM	Board Bus and Return to Lowell Center

Wednesday, November 6 | Pyle Center Room 335

Course Director: Ray Klimovitz

8:00 AM – 10:00 AM	Hop Production <i>Ben Boo, Mighty Axe Hops</i>
10:00 AM – 12:00 PM	Hop Extracts & Advanced Hop Products <i>Ray Klimovitz, Klimovitz Brewing Consultants, Inc.</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:15 PM – 4:00 PM	Brewery Water and Adjustment <i>Joe Walts, Octopi Brewing</i>
4:15 PM – 5:15 PM	Hop Discussion Panel (Boo, Klimovitz)

Thursday, November 7 | Pyle Center Room 335

Course Director: Steve Presley

8:00 AM – 9:45 AM	Hops <i>Mike Sutton, Hopsteiner</i>
9:45 AM – 10:45 AM	Dry Hop Practices <i>Mike Sutton, Hopsteiner</i>
10:45 AM – 12:00 PM	Brewery Effluent Management <i>Jeff VanVoorhis, Symbiont</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 2:30 PM	Principles of Brewery Cleaning, Sanitizing, and CIP <i>Alejandro Rojas, Ecolab</i>
2:30 PM – 4:00 PM	Design and Operations Considerations for CIP <i>Dirk Loeffler, Loeffler Global Services</i>
4:05 PM – 5:15 PM	Panel discussion on Water, waste water (VanVoorhis, Rojas, & Loeffler)

Friday, November 8 | Pyle Center Room 335

Course Director: Steve Presley

8:00 AM – 10:15 AM	Brewing Grain Safety: Transport, Receiving, Storage, and Pest Control <i>Steve Presley, Anheuser-Busch (Retired)</i>
10:30 AM – 12:00 PM	From Grain to Wort: Milling <i>Nicholas Lavelle, Founders Brewing</i>
12:00 PM – 12:30 PM	Lunch – Pyle Center Dining Hall
12:30 PM – 2:30 PM	From Grain to Wort: Mashing <i>Steve Presley, Anheuser-Busch (Retired)</i>
2:30 PM – 2:45 PM	Load onto Bus at Pyle Center
2:45 PM – 3:45 PM	Bus Trip to New Glarus Brewing Co.
4:00 PM – 5:30 PM	Tour of New Glarus Brewing Co.
6:00 PM – 6:30 PM	Tour of New Glarus Wild Fruit Cave
6:30 PM – 7:30 PM	Board Bus and Return to the Lowell Center
7:30 PM – 8:30 PM	Pizza Dinner (supplied by Master Brewers)

Saturday, November 9 | Pyle Center Room 335

Course Director: Steve Presley

9:00 AM – 11:00 AM	From Grain to Wort: Lautering <i>Steve Presley, Course Director</i>
11:00 AM – 12:00 PM	Lunch – Pyle Center Dining Hall
12:00 PM – 1:00 PM	From Grain to Wort: Wort Boiling, Whirlpool, and Cooling/Aeration <i>Steve Presley, Course Director</i>

Sunday, November 10 | Free Day

All Day

No Classes Schedule

Monday, November 11 | Pyle Center Room 335

Course Director: Darren Goodlin

8:00 AM – 9:00 AM	Yeast Metabolism <i>Jon Roll, University of Wisconsin, Department of Bacteriology</i>
9:15 AM – 11:45 AM	Brewing Microbiology <i>Bill Maca, MillerCoors (Retired)</i>
11:45 AM – 12:45 PM	Lunch – Pyle Center Dining Hall
12:45 PM – 2:30 PM	Nature of Brewer's Yeasts <i>Bill Maca, MillerCoors (Retired)</i>
2:45 PM – 5:15 PM	Plant automation <i>Darren Goodlin, Goodlin Process Solutions</i>

Tuesday, November 12 | Pyle Center Room 335

Course Director: Tom Eplett

8:00 AM – 9:30 AM	Wort Aeration, Yeast Pitching, and Fermentation <i>Jeff Biegert, New Belgium Brewing Company</i>
9:45 AM – 11:00 PM	Cellar Operations and Beer Filtration <i>Tom Eplett, MillerCoors</i>
11:00 am – 12:15 PM	Automation for Craft Breweries <i>Ueli Schrader, LSI Control Systems Integration Canada</i>
12:15 PM – 1:15 PM	Lunch – Pyle Center Dining Hall
1:15 PM – 2:15 PM	Sour Beer Production <i>Marcio Buffolo, Shades Of Pale Brewing</i>
2:30 PM – 2:45 PM	Load onto Bus at Pyle Center
2:45 PM – 3:15 PM	Bus Trip to Wisconsin Brewing Co.
3:30 PM – 4:30 PM	Tour
5:00 PM – 5:30 PM	Board Bus and Return to the Lowell Center

Wednesday, November 13 | Pyle Center Room 335

Course Director: Tom Eplett

8:00 AM – 10:00 AM	Brewery Calculations <i>John Seabrooks, Rio Bravo Brewery</i>
10:15 AM – 12:00 PM	Specialty Beers Design <i>Danny Warner, Bell's Brewery</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 2:45 PM	Physical and Flavor Stability of Beer <i>Tom Eplett, Miller Coors</i>
3:00 PM – 5:00 PM	Beer Quality: Process Control and Quality Management <i>John Seabrooks, Rio Bravo Brewery</i>

Thursday, November 14 | Pyle Center Room 335

Course Director: Tom Eplett

8:00 AM – 12:00 PM	Student Team Presentations Teams 1-6 <i>Case Study Review Panel</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 2:15 PM	Sensory Evaluation <i>Ian McLaughlin, Craft Brew Alliance</i>
2:15 PM – 2:45 PM	Break – UPS Shipping Service Available at Pyle Center
2:45 PM – 5:00 PM	Draft Beer Packaging <i>Steve Bradt, Micro Matic</i>
5:00 PM – 7:00 PM	Hospitality Room Open – Mendota Room Lowell Center
7:00 PM – 9:00 PM	Dinner and Awarding of Certificates – AT&T Lounge, Pyle Center <i>Tom Eplett, Course Director</i>

Friday, November 15 | Pyle Center Room 335

Before 11:00 AM	Hotel Check Out
8:45 AM – 9:00 AM	IBD Exam Check-In
9:00 AM – 11:00 AM	IBD General Certificate (Brewing) Examination (Prior registration required) <i>Cheryl Kruchten, Master Brewers Staff</i>