

2018 MBAA Brewing and Malting Science Course

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

October 21 – November 2, 2018

Course Director: Fred Scheer, IDD Process & Technology, Inc.

Sunday, October 21 | Lowell Center

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 – Room 118 Lowell Center**

7:00 PM – 8:30 PM **Dinner – Lowell Center Dining Room**
Course Introduction and Lowell Center Information
Fred Scheer, Course Director

Monday, October 22 | Pyle Center Room 235

8:00 AM – 8:30 AM **Team Assignments, Case Studies, and Student Introductions**
Fred Scheer, Course Director

8:30 AM – 10:00 AM **Life Sciences for Brewers**
Jon Roll, University of Wisconsin, Department of Bacteriology

10:15 AM – 12:00 PM **Malting Barley: Origins, Production, and Quality**
Scott Heisel, American Malting Barley Association

12:00 PM – 1:00 PM **Lunch – Pyle Center Dining Hall**

1:00 PM – 3:00 PM **Malting and Malt Plant Operations**
Joseph Hertrich, Anheuser-Busch (retired)

3:15 PM – 5:00 PM **Malt Analysis and Specifications**
Joseph Hertrich, Anheuser-Busch (retired)

5:00 PM – 6:00 PM **Tour: UW-Madison Pilot Brewhouse (optional)**
Jon Roll, University of Wisconsin, Department of Bacteriology

Tuesday, October 23 | Pyle Center Room 235

8:00 AM – 9:00 AM **Brewing Adjuncts**
Scott Helstad, Cargill Sweeteners North America

9:10 AM – 10:25 AM **Enzymes in Brewing**
Andrew Fratianni, Dupont

10:35 AM – 11:45 PM **Specialty Malts—Manufacturing and Use**
Bob Hansen, Briess Malt & Ingredients

11:45 AM – 12:15 PM **Lunch – Boxed Lunches**

12:15 PM – 12:30 PM **Load onto Bus at Pyle Center**

12:30 PM – 1:10 PM **Bus Trip to Waterloo, WI for Briess Malthouse Tour**

1:30 PM – 3:00 PM **Tour of Briess Waterloo Malthouse**

3:00 PM – 4:15 PM **Q&A and Refreshments at the Briess Malthouse**

4:30 PM – 5:15 PM **Board Bus and Return to Lowell Center**

Wednesday, October 24 | Pyle Center Room 235

8:00 AM – 10:00 AM	Hop Production <i>Ben Boo, Mighty Axe Hops</i>
10:15 AM – 12:00 PM	Hops <i>Mike Sutton, Hopsteiner</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 3:00 PM	Hop Extracts & Advanced Hop Products <i>Ray Klimovitz, Klimovitz Brewing Consultants, Inc.</i>
3:15 PM – 4:15 PM	Dry Hop Practices <i>Mike Sutton, Hopsteiner</i>
4:15 PM – 5:00 PM	Hop Discussion Panel

Thursday, October 25 | Pyle Center Room 235

8:00 AM – 10:30 AM	Brewery Water and Adjustment <i>Jim Mellem, MillerCoors</i>
10:45 AM – 12:00 PM	Brewery Effluent Management <i>Jeff Van Voorhis, Symbiont</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 3:00 PM	Principles of Brewery Cleaning, Sanitizing, and CIP <i>Alejandro Rojas, Ecolab</i>
3:00 PM – 5:00 PM	Design and Operations Considerations for CIP <i>Dirk Loeffler, Loeffler</i>

Friday, October 26 | Pyle Center Room 235

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>Andreas Frank, Buhler</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

Saturday, October 27 | Pyle Center Room 235

9:00 AM – 11:00 AM	From Grain to Wort: Lautering <i>Fred Scheer, Course Director</i>
11:00 AM – 12:00 PM	Lunch – Pyle Center Dining Hall
12:00 PM – 2:00 PM	From Grain to Wort: Wort Boiling, Whirlpool, and Cooling/Aeration <i>Fred Scheer, Course Director</i>

Sunday, October 28 | Free Day

All Day No Classes Scheduled

Monday, October 29

| Pyle Center Room 235

8:00 AM – 9:00 AM	Yeast Metabolism <i>Jon Roll, University of Wisconsin</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 Engineering, Utilities, and Process Control <i>Fred Scheer, IDD Process & Technology, Inc.</i> <i>Darren Goodlin, Goodlin Process Solutions</i>

Tuesday, October 30

| Pyle Center Room 235

8:00 AM – 9:30 AM	Wort Aeration, Yeast Pitching, and Fermentation <i>Jeff Biegert, New Belgium Brewing Company</i>
9:45 AM – 12:00 PM	Cellar Operations and Beer Filtration <i>Tom Eplett, MillerCoors</i>
12:00 PM – 1:00 PM	Lunch – Pyle Center Dining Hall
1:00 PM – 2:30 PM	Alternative Fermentations and Barrel Aging <i>James Moriarty, Urban Renewal Brewery</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, October 31

| Pyle Center Room 235

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>Alec Mull, Founders Brewing</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 1

| Pyle Center Room 235

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>Liz Pratt, Consultant</i>

2:15 PM – 2:45 PM

Break – UPS Shipping Service Available at Pyle Center

2:45 PM – 5:00 PM

Draft Beer Packaging

Steve Bradt, Micro Matic

5:00 PM – 7:00 PM

Hospitality Room Open – Room 118 Lowell Center

7:00 PM – 9:00 PM

Dinner and Awarding of Certificates – Lowell Dining Room

Fred Scheer, Course Director

Friday, November 2

| Pyle Center Room 310

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)

Fred Scheer, Course Director