

Brauer Kursus Weihenstephan

Certificate Program at Technical University of Munich

June – September 2023

Datum/Woche	Inhalt
1 June 2023 (Thu) 18:00-19:00 CEST	Kick Off Session <i>online</i>
8 June 2023 (Thu) 18:00-20:00 CEST	Module 1 – Raw Material Hop <i>online</i> Hop Varieties and Growing Regions Composition and Properties Hop Products
15 June 2023 (Thu) 18:00-20:00 CEST	Module 2 - Raw Material Barley and Malt <i>online</i> Barley and Malt Quality Requirements Malting Technologies and Processes Malt Analysis Evaluation of Malt Quality Malt Types and other Specialty Malts
22 June 2023 (Thu) 18:00-20:00 CEST	Module 3 – Brewing Wasser <i>online</i> Water Quality and Water Chemistry Requirements for Brewing Process Permanent Hardness and Residual Alkalinity Water Improvement and Quality Control Influence of Water Quality on Beer Styles
29 June 2023 (Thu) 18:00-20:00 CEST	Workshop – Raw Materials <i>online</i>
6 July 2023 (Thu) 18:00-20:00 CEST	Module 4 – Brewhouse 1 Wort Production (Milling, Mashing, Lautering) <i>online</i> From Malt to Wort the Theory and Technology of Mashing Mashing Processes: Infusion/Decoction Milling, Mashing – In Lautering (Mash Vessels, Lauter Tun, Mash Filters) Brewhouse Technologies Quality, Economical Considerations
13 July 2023 (Thu) 18:00-20:00 CEST	Module 5 - Brewhouse 2 - Wort Boiling and Cooling <i>online</i> Chemical Processes during Wort Boiling, Addition of Hops Wort Boiling Systems – Comparison Principles of Wort Separation, Clarification, Hot Break Theory and Praxis of Wort Cooling Wort Aeration Small Batch Brewing
20 July 2023 (Thu) 18:00-20:00 CEST	Workshop - Wort Production <i>online</i>
27 July 2023 (Thu) 18:00-20:00 CEST	Module 6 - “Design your first brews!” <i>online</i> Brewing Calculations, Recipe Formulation What Parameters are important for Planning a Brew Batch? Design und Calculate Your First Recipe – A Practical Guide Introduction to Beer Styles Troubleshooting

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3 August 2023 (Thu) 18:00-20:00 CEST	Module 7 - Beer Production 1 - Fermentation and Maturation <i>online</i> Yeast Taxonomy Characteristics and Metabolism Top and Bottom Fermenting Yeasts for Brewing Yeast Propagation and Management Alcoholic Fermentation Conventional Fermentation and Maturation Processes and Techniques Carbonization Storage and Aging
10 August 2023 (Thu) 18:00-20:00 CEST	Module 8 - Beer Production 2 - Filtration, Stabilization, and Filling <i>online</i> Theory of Filtration, Stabilization and Filling Introduction into Technologies and Systems Filtration Types (Kieselgur / Membrane Filtration), Filtration Aids Stabilizing Agents Flavor Stability Filling Principles Analytics for Quality Control
17 August 2023 (Thu) 18:00-20:00 CEST	Workshop Beer Production <i>online</i>
24 August 2023 (Thu) 18:00-20:00 CEST	Module 9 – Analytics <i>online</i> Introduction to Water, Malt, Wort and Beer Analysis Measuring Technologies and Devices The Brewing Process – Correct Interpretation and Analysis of Key Measurements Quality Issues
29 August 2023 (Tue) 18:00-20:00 CEST	Module 10 – Sensory Science <i>online</i> The Human Sensory System Introduction into the Sensory Science Development and Sources of Flavors and Off-Flavors in Beer Overview of Selected Flavors and Off-Flavors: Importance, Problem Areas and Troubleshooting
31 August 2023 (Thu) 18:00-20:00 CEST	Module 11 - Draft Beer Dispensing Systems <i>online</i> Overview of Dispensing Systems Components Gas Systems and Types Risks and Safety Dispensing Unit Physics and Optimum Settings Cleaning and Maintenance Dispensing the Best Beer – Practical Tips
7 September 2023 (Thu) 18:00-20:00 CEST	Module 12 - Cleaning and Sanitizing <i>online</i> The World of Microorganism Microbiology in a Brewery Danger of Biofilms Principles of Cleaning, Sanitizing und Disinfection CIP Systems
11 – 15 September 2023 (Mon – Fri)	On-Campus Program - TUM Research Brewery, Weihenstephan Excursions Local Breweries Presentation of Certificates

subject due to change