

# Chocolate Manufacturing: Intense Practical Course from July 8 to 26, 2024 / PROGRAM

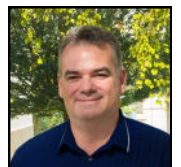
**Course fee:**  
**8.980,00 €**

## **Services included:**

- Refreshments: snacks and drinks
- Lunch and dinner at ZDS refectory
- ZDS-Diploma "Chocolate/Confectionery"

## **Your instructor:**

Guillermo Geschwindner  
Dipl.-Ing. Food Technology,  
Technical Instructor Sugar Con-  
fectionery and Chocolate



## **Any Questions?**

Please contact our seminar department:  
[seminar@zds-solingen.de](mailto:seminar@zds-solingen.de)

## Week 1

# Monday, July 8, 2024

9:30 **Welcome**

09:45 **Theory: Cocoa**

- Cocoa tree, types and history
- Harvest, fermentation and drying
- Quality criteria

*Cooko GmbH*

11.30 Vertical ball mills for the production of chocolate, spreads, and compounds from dosification to finished products

*Packint s.r.l. chocolate equipment*

**Theory: Cocoa bean processing**

- Cleaning, Roasting (bean, nib, liquor)
- Breaking, Winnowing
- Grinding to liquor
- Cocoa butter and powder

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13:00 **Lunch**

14:00 **Practice: Cocoa bean evaluation and processing**

- Evaluation of different cocoa beans
- Debacterisation
- Breaking and winnowing
- Nib roasting
- Pre- and fine grinding of Cocoa Nibs

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17:30 **Final discussion and end of the first day - Dinner**

# Tuesday, July 9, 2024

8:30 **Theory: Raw materials: Cocoa butter, cocoa powder, sugar, milk ingredients, flavor**

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**Theory: Manufacturing of chocolate**

- Recipes
- Manufacturing of chocolate (mixing process, refining process, conching process)

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10.30 **Theory: Milk ingredients for chocolate and fillings**

*ALPAVIT Champignon Hofmeister GmbH (OKG)*

**Theory: Manufacturing of chocolate (tbc)**

- Recipes
- Manufacturing of chocolate (mixing process, refining process, conching process)

*ZDS*

13:00 **Lunch**

- 14:00 Practice: Chocolate manufacturing**
- Bühler group—Mixing, refining (5-roll refining), conching—Milk chocolate
  - McIntyre Refiner/ Conche—Dark chocolate
  - Netzsch Rumba system—White chocolate
  - Packint—Ball mill—Milk chocolate

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- 17:15 Final discussion and end of the day - Dinner**

## Wednesday, July 10, 2024

- 08:30 Practice: Liquification of chocolate and finishing chocolates**

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- 09:30 Theory and practice: Netzsch Rumba system**

*Netzsch-Feinmahltechnik GmbH*

- 13:00 Lunch**

- 14:00 Practice: Chocolate tempering (manual tempering, seeding method)**

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**Practice: Netzsch Rumba system**

*Netzsch-Feinmahltechnik GmbH*

- 17:15 Final discussion and end of the day - Dinner**

## Thursday, July 11, 2024

### Visit of Sollich KG, Bad Salzuflen

- 6:45 Departure ZDS**

- 9:00 Arrival at Sollich**

**Theory:**

- Tempering of chocolate
- Enrobing
- Cooling

**Factory visit and demos**

- 12.30 -**

- 13.30 Lunch**

- 13.30 Departure**

### Visit of Ludwig Weinrich GmbH & Co.KG, Herford

- 14.00 Factory visit and demos**

- 17.00 Departure to ZDS**

- 20.00 Dinner at the ZDS**

## Friday, July 12, 2024

**08:30**      **Practical exam of course topics - Part I**

**09:30**      **Theory:      Moulding technologies**

- Classic shell moulding
- Book moulding
- Cold stamping
- Hollow figures
- One shot depositing

**Aasted Germany GmbH**

**13:00**      **Lunch**

**In the afternoon visit Schloss Burg, Solingen**

## Week 2

## Monday, July 15, 2024

**08:30**      **Theory:      How to Measure Viscosity and Yield Point of Chocolate**

**Thermo Fisher Scientific**

**11.00**      **Flow properties of chocolate - Practical application**

**PGPR**

**Palsgaard A/S**

**13:00**      **Lunch**

**14:00**      **Theory:      Particle Analysis Technology**

**Sopat GmbH**

**15.00**      **Practice: Particle Analysis Technology**

**Sopat GmbH**

**17:15**      **Final discussion and end of the day - Dinner**

## Tuesday, July 16, 2024

**08:30**      **Theory:      Allergen management**

**R-Biopharm AG**

**09:30**      **Theory:      Emulsifier Lecithin**

**Bunge Lodders Croklaan**

**11.00**      **Theory:      Cocoa butter alternatives**

- CBE
- CBR
- CBS
- And vegetable fats for fillings

Bunge Loders Croklaan

**Practice:** Elaboration of compounds and fillings

Bunge Loders Croklaan/ZDS

**13:00**

**Lunch**

**14:00**

**Practice:** Elaboration of compounds and fillings

Bunge Loders Croklaan/ZDS

**17:15**

**Final discussion and end of the day - Dinner**

## Wednesday, July 17, 2024

**8:30**

**Theory:** Sensorial evaluation of cocoa beans and cocoa mass (part I)

Infopoint Kakao und mehr

**Theory:** Crystallisation of cocoa butter

- Composition of cocoa butter
- Temperindex
- Multitherm—Bühler Crystallization Index
- DSC

Infopoint Kakao und mehr

**Practice:** Crystallisation of cocoa butter

- Temperindex
- Multitherm-Bühler Crystallization Index

Infopoint Kakao und mehr

**13:00**

**Lunch**

**14:00**

**Practice:**

Crystallisation of cocoa butter

- Temperindex
- Multitherm - Bühler Crystallization Index

Infopoint Kakao und mehr

**Theory:**

Fat bloom and sugar bloom

Infopoint Kakao und mehr

**17:15**

**Final discussion and end of the day - Dinner**

## Thursday, July 18, 2024

- 08:30**    **Theory:**    Sensorial evaluation of chocolate (part II)  
                 *Infopoint Kakao und mehr*
- 13:00**    **Lunch**
- 14:00**    **Practice:**    Sugar crust liquor
- With alcohol
  - Without alcohol
- ZDS*
- 17:15**    **Final discussion and end of the day - Dinner**

## Friday, July 19, 2024

- 08:30**    **Practical exam of course topics -Part II**
- Theory:**    Fondant raw mass and fillings  
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- Practice:**    Fondant raw mass production  
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- Practice:**    Fondant
- Fondant deposited in starch or moulds
  - Fondant as filling
  - Fondant for extrusion
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- Theory:**    Chocolate panning  
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- Practice:**    Chocolate panning
- Precoating
  - Engrossing
  - Smoothing
  - Polishing
  - Sealing
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- Practice:**    Destarching and enrobing of sugar crust liqueur  
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- 13:00**    **Lunch**  
**Departure Solingen - Visit Chocolate Museum in Cologne**

## Week 3

# Monday, July 22, 2024

**09:00** Theory: Praliné

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**Practice: Praliné**

- Raw praliné different methods
- Praliné as filling
- Laminated praliné

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**13:00** Lunch

**14:00** Practice: Praliné

- Raw praliné different methods
- Praliné as filling
- Laminated praliné

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**17:15** Final discussion and end of the day - Dinner

# Tuesday, July 23, 2024

**8:30** Theory: Truffle and ganache

*Schokoladenglück GmbH*

**Practice: Truffle and ganache**

- Deposited
- Extruded/ piped
- Cutted
- Rolled

*Schokoladenglück GmbH*

**13:00** Lunch

**14:00** Practice: Truffle and ganache

Decorations

*Schokoladenglück GmbH*

**17:15** Final discussion and end of the day - Dinner

## Wednesday, July 24, 2024

**08:30**     **Practice:** Truffle and Ganache Finishing

- Powdered, flakes, vermicelli
- Spiked
- Enrobed
- Colored

*Schokoladenglück GmbH*

**13:00**     **Lunch**

**Practice:** Fillings and decorations

*Schokoladenglück GmbH*

**17:15**     **Final discussion and end of the day - Dinner**

## Thursday, July 25, 2024

**08:30**     **Final exam - written**

**Theory:** Croquant and brittle

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**Practice:** Croquant

- Hard croquant
- Laminated croquant
- Brittle

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**13:00**     **Lunch**

**14:00**     **Theory:** Caramel and liquid fillings

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**Practice:** Caramel

- Laminated caramel
- Toffee
- Liquid caramel for chocolate shells

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**19:00**     **Farewell Dinner**

## Friday, July 26, 2024

**08:30**     **Theorie:** Pigging Technology

*M&S Armaturen GmbH*

**09:30**     **Practice:** Finishing of all products and packaging

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**13:00**     **Final discussion and End of the course / Optional Lunch**

*- subject to alterations -*