



INTERNATIONAL DIPLOMA IN CRAFT DISTILLING

Director: Prof. Dr. Fernando Salazar

Laboratory and support assistants:

Dra. Mariela Labbé

Mr. Mauricio Cifuentes

Industrial Fermentation Lab



The International diploma in craft distilling program (I.D.C.D.) is a series of courses which are designed to give the student the necessary knowledge in regards to the science and technology behind distillation, with a focus on craft distilled spirits for human consumption. Course topics will include the history, techniques and technology behind various types of distilled spirits from all around the world (such as Whiskey, Brandy, Rum, Vodka, Cognac, Pisco, Gin, etc.). This program will also cover topics such as applied chemistry, physics, microbiology, and the engineering know-how needed to operate several different types of ethanol stills. The I.D.C.D. program will also touch on some of the various legal aspects that come with alcohol production, and in addition, it will include a practice in whiskey or Pisco distilling and tours of functioning distilleries.

Contents

Fundamental and principles of distillation 1 (Prof. Tomás Schaerer)

- Introduction
- History of distillation: From Jabir ibn Hayyan (Geber) to modernity
- Raw materials overview
- Fermentation overview
- Distilling overview
- Questions

Fundamental and principles of distillation 2 (Prof. Tomás Schaerer)

- Science behind distillation
 - Mass and energy balances
 - Vapor-liquid equilibrium
- Types of distillation: batch and continuous
- Equipment: alembics, distillation columns (tray columns, packed columns)
- Batch distillation techniques and cooling system.
- General distillery equipment
- Questions

Introduction to Sensory Analysis 1 (Prof. Felipe Pizarro)

- What is sensory analysis
- Differences between sensory analysis and classic tasting
- The senses
- The importance and perception of aroma
- How do we perceive flavors?
- Ideal conditions for a tasting
- Panel of people or panel of expert judges
- Tasting area conditions
- Preparation and presentation of samples
- Place vs people
- How do we taste a distillate?

Introduction to Sensory Analysis 2 (Prof. Felipe Pizarro)

- How do we taste a distillate?
- What are the steps we must follow when tasting and serving the distillate in a glass?
- Main differences between alembic and column (in terms of the neutrality of a distillate)
- Type of ideal glassware
- Form of tasting or sensory analysis of the product
- **Visual analysis**
 - Colour
 - Cleanliness and brilliance
 - Density or body
- **Olfactory analysis**
 - Group of aromas
 - Origin of the base alcohol
 - Balance between alcohol and wood
- **Taste analysis**
 - Balance between alcohol and wood (if any)
 - Warmth, itching, astringency, other sensations
 - Tasting of 5 distillates from different origins.

Scottish, Irish and American Whisk(e)y (Prof. Tomás Schaerer)

- History of Whisk(e)y: From Ireland, Scotland and America
- Raw material and preparation of fermentable extract (types of the yeast and bacteria, nutrient, etc.)
- Fermentation, distillation and maturation (storage, aging and packaging)
- Chemical make-up of whiskey
- Process technology: equipment and facilities
- Legal aspects (government regulations EU, USA, Chile)

Fruit spirit making (Prof. Juan Pablo Rosset)

- Introduction to fruit spirits
- Raw material and fermentation processing
- Discontinuous batch distillation
- Pisco industry and technology processing
- History of Chilean and Peruvian Pisco
- Chilean Pisco regulation
- Brandy Industry
- Cognac and Armagnac
- Singani

Gin and vodka making (Prof. Tomás Schaerer)

- History of Gin and vodka
- What botanicals make great Gin?
- Distillation practices for Gin
- Blending botanicals
- Legal aspects (government regulation EU, US and Chile)

Other distilled spirits of world (Prof. Tomás Schaerer)

- Tequila
- Mezcal
- Rum

How to start a distillery (Prof. Dr. Alejandro Conejero)

- Building a distillery. Legal, sanitary and regulatory aspects in Chile.
- How to build a distillery. Step by step.
- Entering the Market with craft spirits.

Distilling practices (Prof. Dr. Fernando Salazar & Tomás Schaerer)

- Whiskey distilling
- Monitoring of distilling and separation of fractions (heads, hearts and tails)

Distillery tour (Prof. Dr. Fernando Salazar)

- Distillery Quinta Normal- Santiago

Schedule (July 2022)

Time	Monday 18th	Tuesday 19th	Wednesday 20th	Thursday 21th	Friday 22th
Morning 10:00- 13:00	Fundamental and principles of distillation Prof. Tomas Schaerer	Fundamental and principles of distillation Prof. Tomas Schaerer	American and Scottish whiskey making Prof. Tomas Schaerer	Whiskey Making Practices: Mashing and fermentation Prof. Fernando Salazar	Fruit spirit making I (Chilean and Peruvian pisco) Prof. Juan Pablo Rosset
Afternoon 15:00- 18:00	Introduction to Sensory Analysis 1 Prof. Felipe Pizarro	Introduction to Sensory Analysis 2 Prof. Felipe Pizarro	Whiskey tasting Prof. Tomas Schaerer		Fruit spirits tasting I Prof. Juan Pablo Rosset

Time	Monday 25th	Tuesday 26th	Wednesday 27th	Thursday 28th	Friday 29th	Saturday 30th
Morning 10:00- 13:00	Fruit spirit making I (Brandy, Cognac, Armagnac y Singani) Prof. Juan Pablo Rosset	Gin and vodka making Prof. Tomas Schaerer	How to start a distillery? Prof. Alejandro Conejero	Whiskey Making Practices: Distilling Prof. Fernando Salazar and Prof. Tomas Schaerer	Tour day Prof. Fernando Salazar	10:00 Course evaluation Prof. Fernando Salazar
Afternoon 15-18:00	Fruit spirits tasting II Prof. Juan Pablo Rosset	Gin and vodka tasting Prof. Tomas Schaerer	Other distilled spirits of world (Tequila, Mezcal, Rum, etc.) Prof. Tomas Schaerer			20:00 Closing ceremony

Tour day

Departure from University at 08:00 am, Av. Brasil 2950

10-12 TN Coopers (Tonelería Nacional) – Curacaví

14-17 Distillery Visiting and brandy tasting – Rinconada de Maipu.

Update 26/05/2022