

UNIVERSITÉ DE TECHNOLOGIE DE COMPIÈGNE

UTC

International winter school

Food engineering school

AN INNOVATIVE
INTERNATIONAL
SCHOOL



Joint Winter
School - Université
de technologie de
Compiègne and
Sorbonne university

27/01 to 07/02/2025

**at the Daniel Thomas Innovation Center
of the University of technology of Compiègne**
16 participants maximum for the winter school

DESCRIPTION

An innovative combination of food science, nutrition and French gastronomy

The latest trends and knowledge in gastronomy science and nutrition will be addressed theoretically and concretely applied to the elaboration of famous French dishes with a healthy twist.

This International Winter School -taught in English- is an original blend between food sciences, technologies and French gastronomy. The programme's objective was to learn how to easily improve the nutritional level and profile of main courses and desserts, by modulating their composition, their textures and cooking modes, while retaining maximum flavour of the original ingredients.

INNOVATIVE TECHNOLOGICAL SOLUTIONS WILL BE PRESENTED AND APPLIED TO PREPARE HEALTHIER VERSIONS OF WORLD-WIDE KNOWN FOOD SPECIALTIES



The theoretical part first addresses the physico-chemical processes that are involved in the dish elaboration, the nutritional and functional profiles of the ingredients, the different texturing agents as well as the latest innovations that allow you to substitute fatty diets, sugar and gluten, among others... All these concepts will be applied during afternoon cooking workshops. The participants will discover French gastronomy via the preparation of typical sauces, dishes and desserts, such as mille-feuilles, chocolate 'fondant' or macaroons with a healthy twist ... whilst applying food formulation innovative approaches.

The approach used in this winter school is a combination of theoretical courses, workshops and project-based learning. Participant teams (group of 4 participants max) will have to develop an innovative food product over the two weeks with the aim to present a prototype at the end. The teams will be coached by experts in the domain of food science and food innovation.

donnons un sens à l'innovation



COURSE OBJECTIVES

At the end of the winter school, the participant will be able to:

- Understand the **main principles and theories of food science** and the mechanisms of phenomena occurring during dish preparation.
- Be aware of the **food composition impact on satiety and health**.
- **Prepare healthier dishes** and **enhance their nutritional profile** by enriching with fibers or proteins and by **substituting fat or sugar** using **innovative approaches**.
- **Choose the best cooking process or texturing agent** dependent on the desired end result.
- **Prepare famous French dishes, sauces, desserts** and confectioneries (classic and revisited recipes).

PREREQUISITES AND CREDITS

Introductory level in organic chemistry or biochemistry (basic knowledge on biological molecules (carbohydrates, proteins, lipids)) **would be advantageous**. The program contains different levels of complexity in order to be **adapted to any level of experience in food formulation and cooking**. The most important criteria is to be **truly interested in cooking and nutritional aspects** of food and healthy concerns.

This summer school is worth 4 ECTS credits issued by the University of Technology of Compiègne.



ABOUT US

Established in 1972, the University of Technology of Compiègne (UTC) is both a French national university and an engineering school, with autonomous training and pedagogy and an innovation-intensive, interdisciplinary technological research programme. UTC is regularly ranked top of the 'best engineering schools' in France. UTC produces graduates (engineers, Master's degree, PhDs) capable of taking into account the interactions of technologies with Society at large and of evolving in a world-scale competitive environment, with the aim of complying with sustainable development policies. The UTC lecturers, research scientists and engineers «lend meaning to innovation», enabling the emergence of new axes underpinning this concept, introducing entrepreneurship principles in the heart of their concerns.

The food science research group investigates the biological mode of action and health potential of phytochemicals found in food. The researchers of this group built a strong experience in the nutritional optimisation of food products and in providing a healthy and bioactive added-value to food products. They developed and leads a technology development and transfer platform in food science, where the gained knowledge in nutritional biochemistry is used to develop prototypes of innovative food products for companies. They have been supporting the development of numerous food innovation projects and is the scientific advisor of several spin-off companies and won several awards on food innovation competition like Ecotrophelia Europe and France.

More pictures, videos.... please visit our Facebook Page !



PROGRAM

WINTER

FOOD ENGINEERING

SCHOOL

Sunday 26 January	Monday 27th January	Tuesday 28th January	Wednesday 29th January	Thursday 30th January	Friday 31th January
Arrival at Compiègne	8h30-9h00 Welcome coffee				
	9h-10h Winter School opening - general explanations and project presentations	9h-12h Lecture Texturing agents Part 2: Emulsifying and foaming agents	9h-12h Lecture Food and Health: dietary fats Nutritional aspects and fat substitution strategies	9h-12h Lecture Food and Health: sugars and sweeteners Nutritional aspects and sugar substitution strategies	9h-12h Lecture Global improvement of the nutritional profile of food
	10h15-12h30 Lecture Main trends of French cuisine – Focus on current and innovative trends	Setting up of the group for the projects			
	Lunch	Lunch	Lunch	Lunch	Lunch
	14h-17h Lecture Texturing agents Part 1: Thickening and gelling agents	13h30-17h30 Practical session <i>Texturing agents</i>	13h30-15h30 Practical session about fatsubstitution 15h30-17h30 Group work on their project (in autonomy)	13h30-15h30 Practical session about fatsubstitution 15h30-17h30 Group work on their project (in autonomy)	13h30-15h30 Practical session about fatsubstitution 15h30-17h30 Group work on their project (in autonomy)
Saturday 1st February	Monday 3rd February	Tuesday 4th February	Wednesday 5th February	Thursday 6th February	Friday 7th February
Technico-cultural outing Pierrefonds	8h30-9h30 Lecture - Introduction to sensory analysis	9h-12h Group work on their project In parallel of their autonomous work on the platform each group will have a training session about sensory analysis or physical characterization of their food product	9h-12h Cooking demonstration Chef	9h-10h30 Group work on their project 10h30-12h written exam (QCM)	9h-11h Final project Realisation 11h00-14h00 Project defense and degustation
	9h45-10h45 Introduction to physicochemical characterizations of food				
	11h00-12h00 Lecture - Introduction to shelf life of food				
Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
Free afternoon	13h30-17h30 Group work on their project In parallel of their autonomous work on the platform each group will have a training session about sensory analysis or physical characterization of their food product	13h30-17h30 Group work on their project In parallel of their autonomous work on the platform each group will have a training session about sensory analysis or physical characterization of their food product	13h30-17h30 Group work on their project	13h30-17h30 Group work on their project	14h30-16h30 Final cooking class French macarons 19h30 Gala diner