

Reaction Kinetics in Food Science

13 - 17 October 2025

Wageningen Campus, the Netherlands



BACKGROUND

The use of kinetics is necessary for many aspects of food and nutrition research. Enzymatic, chemical, physical and microbial reactions in foods occur simultaneously during processing and storage, and usually it is a cascade of reactions. The food scientist needs to optimize the quality of food, and this can only be done in a quantitative way with the proper use of kinetics. Furthermore, the food process engineer needs kinetics in order to optimize processes. In addition, kinetic modelling is also useful for the nutritionist, to study the kinetics of changes during digestion and assimilation in the body (digestion and bioavailability).

PARTICIPANTS

The target group consists of PhD students and researchers in food science, or related scientific fields.

Prerequisites: a basic knowledge on food science and technology or related disciplines as well as some fundamental knowledge of mathematics and statistics is required.

PROGRAMME TOPICS

The course will be composed of lectures, demonstrations and computer exercises. There is a possibility to discuss kinetic problems in relation to own work of participants.

In the lectures, the importance of kinetic modelling will be put in perspective, including the interplay between statistics and science, followed by detailed treatment of kinetic modelling of chemical reactions, of enzymatic reactions, of microbial growth and inactivation and of some physical processes, also in combination with (bio)chemical reactions. Also, the application of kinetics in reactor engineering will be treated, and most importantly, special attention will be given to complicating conditions as present in foods.

COURSE LECTURERS

Course coordinators

- Prof **Tiny van Boekel**, Food Quality and Design, Wageningen University & Research, the Netherlands
- Dr **Matthijs Dekker**, Food Quality and Design, Wageningen University & Research, the Netherlands

Other faculty

- Prof. **Marcel Zwietering**, Food Microbiology, Wageningen University and Research, the Netherlands
- Prof. **Heidy den Besten**, Food Microbiology, Wageningen University and Research, the Netherlands
- Dr **Michael Caracotsios**, Clinical Associate Professor, Chemical Engineering Department, The University of Illinois at Chicago & President, AthenaVisual, Inc., Naperville, Illinois, USA

COURSE FEES

	Early Bird Fee**	Regular fee**
VLAG / WU PhD candidates	€ 325	€ 375
PhD candidates	€ 550	€ 600
Postdocs and other academic staff / Non-profit	€ 825	€ 875
Participants from the private sector	€ 2000	€ 2050

**Early bird registration deadline is 18 August 2025. The final registration date is 13 September 2025.

For more information and registration

