



FUNDAMENTALS OF ENZYME KINETICS

CFU: 2 (14 hours of theoretical and practical lectures)

Teachers: Prof. Francesco Malatesta, Prof. Serena Rinaldo, Prof. Roberto Contestabile
(from the Department of Biochemical Sciences “Alessandro Rossi Fanelli”)

Location: Due to the Covid-19 pandemic, we cannot presently guarantee that lessons will take place in a classroom. If this will be possible, it will be our first choice; if not the course will take place remotely and we will readily communicate with you in early September.

Calendar:

Thursday September 10, 9-11 am (F. Malatesta)
Friday September 11, 9-11 am (F. Malatesta)
Monday September 14, 9-11 pm (F. Malatesta)
Friday September 18, 9-11 am & 14-16 pm (S. Rinaldo)
Friday September 25, 9-11 am & 14-16 pm (R. Contestabile)

Application guidelines:

The course is addressed to 1st & 2nd year Students of the BeMM PhD School and is open to anybody who is interested.

Applications should be sent by email to francesco.malatesta@uniroma1.it, not later than September 1st 2020. Please, indicate “Enzyme Kinetics Course” as the email object, and your Surname and Name, as well as the title of your Ph.D. course, in the text body.

Aim of the Course:

The goal of this short Course is to introduce cell biology, biotechnology, molecular biology, chemistry and biochemistry Students to the kinetics of enzyme-catalyzed reactions, and to cover in detail the assumptions, derivation, and meaning of the Michaelis–Menten equation within a biological context. Special emphasis will also be given on the practical aspects of enzymology and its biological relevance as detailed by specific examples.

Detailed program:

Basic principles of chemical kinetics ❖ Introduction to enzyme kinetics ❖ Practical aspects of enzyme kinetics ❖ Derivation of steady-state rate equations ❖ Reversible inhibition ❖ Multi-substrate enzymes ❖ Frontiers in steady-state enzyme kinetics ❖ From theory to practice: the cases of phosphodiesterases and cyclases controlling biofilm formation ❖ Enzyme inhibition and activation ❖ Types of inhibition ❖ Complex inhibition systems ❖ Examples from the literature.