Summary
We will review modern technique for the determination of structure and dynamics in chemistry. Recent developments in spectroscopy as well as methods that target the fundamentals of chemical reactions will be discussed, and applications will be studied.

Content
Recent developments in spectroscopy
Reaction dynamics experiments
Control of chemical reactions
Studies of dynamics in the gas phase, on solid/liquid surfaces, and in bulk liquid

Learning Prerequisites
Important concepts to start the course
Quantum Mechanics
Spectroscopy
Kinetics

Learning Outcomes
By the end of the course, the student must be able to:
• Compare different techniques for spectroscopy and dynamics
• Decide on the optimum method for any given problem
• Judge the quality of spectroscopic and dynamic studies
• Describe different experimental methods
• Anticipate the outcome of a particular experiment
• Explain control concepts in chemical dynamics

Transversal skills
• Plan and carry out activities in a way which makes optimal use of available time and other resources.
• Use a work methodology appropriate to the task.
• Demonstrate a capacity for creativity.
• Demonstrate the capacity for critical thinking

Expected student activities