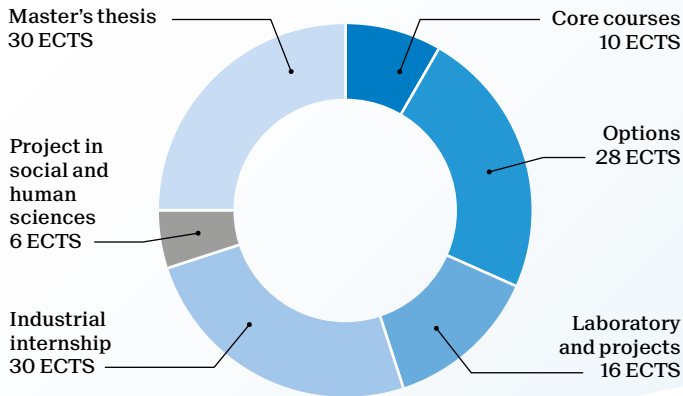


## Master of Science in CHEMICAL ENGINEERING AND BIOTECHNOLOGY

2-year program - 120 ECTS



Students can opt for a 30 ECTS minor instead of the industrial internship.

### Recommended minors:

- Engineering for sustainability
- Materials science and engineering
- Physics

	Credits
<b>Core courses</b>	<b>10</b>

Management and safety	
Safety of chemical processes	2

Chemical engineering	
Diffusion and mass transfer	4
Heterogeneous reaction engineering	4

Options	
	<b>28</b>

Energy	
Catalysis for emission control and energy processes	3
Catalysis for energy storage	3
Electrochemical engineering	3
Modeling and optimization of energy systems	4
Nanomaterials for chemical engineering application	3
Process intensification and green chemistry	3
Solid state chemistry and energy applications	3
Thermodynamics of energy conversion and storage	3

Biotechnology	
Bioprocesses and downstream processing	4
Biotechnology lab	4
Food biotechnology	2
Nanobiotechnology and biophysics	3
Pharmaceutical biotechnology	3
Principles and applications of systems biology	3
Selected topics in life sciences	3
Synthetic biology	4

Materials and food engineering	
Chemistry of food processes	2
Chimie des denrées alimentaires	2
Food biotechnology	2
Organic electronic materials	4
Physical and chemical analyses of materials	3
Physical chemistry of polymeric materials	3
Polymer chemistry and macromolecular engineering	3
Risk management	2
Solid state chemistry and energy applications	3

Laboratory and projects	
	<b>16</b>

Chemical engineering lab and project	4
Chemical engineering product design	4
Process development	8