

Chemical Engineering: Chemical Engineering/Textile Chemistry (M. Sc.)

At the end of this Master's programme, graduates should have acquired a fundamental knowledge of chemical and to a certain degree also biochemical processes in respect of structure, process selection, and economic aspects.

They should be able to formulate and solve technical, economic, and managerial problems applicable to processing industries.

They should have the ability to design process equipment and chemical reactors. This requires an advanced knowledge of heat and mass transfer phenomena, fluid dynamics, and chemical reaction engineering.

They should also be able to operate process equipment on a mini-plant scale and use it to acquire essential data. They should know the procedures, heuristic rules, and other tools of process development and plant engineering, including an extended knowledge of international standards, authority engineering plus health, safety, and environment (HSE) regulation affairs.

Complex well-defined as well as poorly posed problems from the field of chemical engineering should be solved efficiently and effectively by the graduates while using a variety of data sources as well as uncertain information. If experiments are necessary to solve problems, the graduates should be able to draw up a plan of experiments i.e. with the DOE method (design of experiments).

Based on the experimental results or other process data, they should be able to set up the required regression or physico-chemical models and to use appropriate mathematical tools to find the optimal sensitive process parameters.

The graduates should be competent in the use of appropriate computer software, especially process simulation tools, to solve complex problems and to simulate flow as well as heat and mass balances of processes. They are trained to work in teams and/or as individuals. They should have the ability to communicate results via various media.