RIGA TECHNICAL UNIVERSITY

Faculty of Materials Science and Applied Chemistry

Study programme "Chemical Technology"

Note! This is a preliminary list of courses. Changes may occur!

AUTUMN SEMESTER

BACHELOR COURSES

Code	Course name	CP	ECTS
KTM103	**Analytical Chemistry**	**4.0**	**6.0**
The study course provides a comprehensive understanding of the principles of analytical chemistry and applications of chemical reactions for the analysis of chemical substances. Students will gain knowledge about the analytical process and classical analytical chemistry methods including titration and gravimetric analysis. Both theoretical and practical learning approaches are used, besides theoretical knowledge, practical and hands-on skills are acquired.			
KVK741	**Organic Chemistry (part 1)**	**6.5**	**10.5**
The study course provides basic knowledge in the field of organic chemistry. It covers the structure of carbon-based compounds, bond formation principles and mechanisms of the most common reactions. The study course includes the following topics: main classes of the organic compounds, principles of nomenclature, methods of preparation, chemical and physical properties and practical application directions. Introduction to natural compounds is given, discussing carbohydrates and amino acids and their role in living organisms. To emphasise the role of organic chemistry in the economy, insight in the most important industrial production processes is given. Selected topics of special importance for Latvian producers, wood and food chemistry, are included. In addition to the theoretical part, laboratory works are included to give basic skills in organic synthesis, compound isolation, purification and characterization.			
KVT312	**Chemical Process Modeling**	**3.0**	**4.5**
Basics of simulation. Principles of algorithmization. Numerical methods. Residence time distribution. Material and heat balances for steady and non-steady state processes. Sources and sinks. Flow sheeting basics.			
KVK739	**Physical Chemistry, Thermodynamics**	**3.0**	**4.5**
The study course provides a comprehension of the thermodynamics of chemical processes. This allows for applying thermodynamic laws to predict the possibility of chemical processes. A student acquires knowledge about the thermodynamic parameters of chemical processes, as well as knowledge about the laws of chemical equilibrium and phase equilibrium. Students will gain knowledge about the methods of calculating the thermodynamic parameters of chemical reactions and the practical application of the calculation results. The study course views the first, second, and third laws of thermodynamics, chemical equilibrium, Clausius-Clapeyron equations, Raoult's law, thermal analysis, physicochemical analysis. The work of studies is focused on the acquisition of theoretical and practical knowledge.			

Note! Full course description available by clicking on the course code!