



**Keilir**

Miðstöð vísinda,  
fræða og atvinnulífs

## **Chemistry 3A (EFN3A06)**

### **Preliminary University Studies Department**

#### **Course description**

**The course will include the following aspects of chemical reactions:**

- Chemical reactions
- Oxidation-/reduction reactions
- Acid-/base reactions
- Precipitation reactions
- Proportions
- Restrictive component/s
- Excess
- Residue
- Efficiency
- Energy
- Heat changes
- Heat of reaction
- Hess' Law
- Heat of formation
- Activation energy
- Energy graph of a chemical reaction
- Speed of chemical reactions
- Speed equation
- Speed constant
- The connection between the mechanism of chemical reactions and speed equation
- The effect of temperature, molar concentration and catalysts on the speed of chemical reactions

**The course will in addition cover these aspects regarding equilibrium and salts:**

- Concept/s of equilibrium
- Equilibrium equations
- Equilibrium constant

- The effect of external factors such as heat, pressure and changes in molar concentration on the equilibrium position and equilibrium constant of chemical reactions
- The solubility of salts
- Solubility multiplication
- Molar concentration of ions in a salt solution

### **Prerequisites (Required preparation)**

Chemistry 2A

### **Competence level**

3

### **Credits**

6

### **By the end of the course the student has:**

- Understood the importance of research in chemistry and the effects of it on the history and development of the subject.
- Realized the usefulness of the subject in relation to Icelandic context as well as providing a foundation for future study, participation in society and various workplaces.
- Gained understanding of the basics of chemistry.
- Received training in conducting experiments in a laboratory.
- Has developed the ability to present research findings in a report.
- Understood the effects of chemicals in the environment.

### **Course assessment:**

The course is assessed in a variety of ways, there among group work, individual assignments, quizzes and a final exam that will make up part of the final grade.