Level: Graduate academic studies (master), second level

Course title: SCHOOL EXPERIMENTS IN CHEMISTRY TEACHING

Status: elective

ECTS: 7

Requirements: none

Learning objectives

Forming and development of students' attitudes - future chemistry teachers about the importance of chemical experiments in chemistry, especially in learning in chemistry curriculum.

Learning outcomes

After successfully completing the course, the student is able to:

Critically interpret the role of chemical experiments as a primary source and basic method of scientific cognition in chemistry; critically assess the significance of chemical experiment from the aspect of cognition specificity in chemistry; classify chemical experiments in teaching according to various criteria; analyze the risks and implement the necessary safeguards in the implementation of chemical experiments in teaching; select the appropriate chemical experiment, form of operation and the technique of chemical experiment for a given teaching situation; take responsibility for the organization of academic laboratory; timely and appropriately respond in the event of an accident in the course of performing chemical experiment.

Syllabus

Theoretical instruction

Chemical experiments in chemistry teaching, importance and function. Criteria for the selection of chemical experiments in teaching. Types of chemical experiments. Methodical division of chemical experiments: the main experiment, model-experiment, comparative experiment, experiment for determining chemical principles, experiment in processing. Demonstration experiments. Students' experiments: the organization and forms of work. Standards for equipping the chemistry cabinet and school laboratories. Chemical apparatus in teaching. Demonstration apparatus and their assembly. Handling basic laboratory equipment. Sets of apparatus for demonstration chemical experiments on the overhead projector. Apparatus and equipment for students' chemical experiments: micro and semi-micro technique. Obtaining gases and handling gases in school laboratory. Sources of electricity for the needs of school chemical experiments. Precautions in chemical instructional experiments. Handling chemicals and their storage. Accidents and injuries which can occur when performing chemical experiments in teaching: mechanical injuries, burns, chemical poisoning, fires, explosions. First aid equipment.

Practical instruction:

Exercises, Other forms of teaching, Study research work

Analysis and experimentation provided by the current curriculum of chemistry for primary school teaching of chemistry and chemistry teaching in high schools and vocational schools.

Weekly teaching load				Other
Lectures 2	Exercises: 4	Other forms of teaching:	Student research:	