Course unit description

Course unit title	History of Chemistry
Semester	VIII
Prerequisites	-
Credits	2 (VU) 3 (ECTS)
Student's workload	Total – 80 h
	Lectures – 32 h
	Seminars
	Tutorials
	Laboratory work
	Consultations
	Independent studies – 48 h
Language of instruction	Lithuanian
Course annotation	In this course history of chemistry is studied in context of history of scientific views in general. Each topic covers development of some specific idea from ancient times till nowadays.
Learning outcomes	After successful completion of this class student will be able to: • Describe development of ideas about matter from antique to nowadays. • Show difference between accumulation of technological knowledge and development of chemistry as a science. • Explain influence of chemical knowledge to the development of society.
Course unit content	1. Renaissance of European science. Antique inheritance and confrontation of new ideas with it. From Ptolemaic universe to N. Copernicus, Bruno, Galileo. Mystical and scientific viewpoints of the reality. (4 h.) 2. Elements and atoms from ancient times to Boyle and Dalton. Definition of element according Boyle. Atomistic of Dalton. (6 h.) 3. Ancient technological knowledge. Pigments and dyes. Soap. Ceramics. Metallurgy. Glass. Fermentation. (4 h.) 4. Fire. Combustion according antique viewpoint. Gun powder. Explosive. Phlogiston theory. Gas investigation. Revolution in

	chemistry. Lavoisier and his contemporaries. (6 h.) 5. Medicinal chemistry (jatrochemistry). Paracelsus. Influence of medicine to chemistry. Emerging of Chemistry education in European universities and in Vilnius University. (4 h.) 6. Electrical phenomenon from antique to Volta. Development of chemical sources of electric current. Electrolysis. Discovery of new elements. Explanation of electrical conductivity by Grotthuss and by Arrhenius. (4 h.) 7. Atom from philosophical to physical concept. Models of atom. (2 h.) 8. Student presentations. (2 h.)
Reading list	1.H. W. Salzberg, From cavemen to chemist, Washington, ACS, 1991. 2. Z Mačionis., J Kudaba. Chemijos ištakos Lietuvoje. - V.: VU, 1984. 3. Z Mačionis. Chemija Vilniaus V.Kapsuko universitete. - V.:VU, 1984.
Additional reading list	1. Zenonas Mačionis. Iš chemijos mokslo istorijos Lietuvoje. - K.: Šviesa, 1991.
Teaching method	Lectures, discussions, writing of essay or preparation of presentation, independent reading.
Attendance requirements	Attendance of lectures 80%
Assessment requirements	Student should write essay or prepare presentation on selected topic.
Assessment methods	80% essay or presentation, 20% discussion.