This course syllabus is discontinued or replaced by a new course syllabus.

ÖREBRO UNIVERSITY

Course Syllabus

School of Science and Technology

Analytical Chemistry, 7.5 Credits

Course Code:	KE103G	**Subject Area:**	Field of Science
Main Field of Study:	Chemistry	**Credits:**	7.5
		Subject Group (SCB):	Chemistry
Education Cycle:	First Cycle	**Progression:**	G1F
Established:	2014-12-09	**Last Approved:**	2018-02-28
Valid from:	Spring semester 2019	**Approved by:**	Head of School

Aims and Objectives

General aims for first cycle education

First-cycle courses and study programmes shall develop:
- the ability of students to make independent and critical assessments
- the ability of students to identify, formulate and solve problems autonomously, and
- the preparedness of students to deal with changes in working life.

In addition to knowledge and skills in their field of study, students shall develop the ability to:
- gather and interpret information at a scholarly level
- stay abreast of the development of knowledge, and
- communicate their knowledge to others, including those who lack specialist knowledge in the field.

(Higher Education Act, Chapter 1, Section 8)

Course Objectives

Knowledge and comprehension
After completing the course, students
- understand the theory of the methodology of gravimetric, titrimetric and electrochemical analysis,
- know the basic principles of spectroscopic and chromatographic methods,
- have an understanding of the links between basic statistics and applied analytical chemistry, and
- understand the significance of quality assurance in analytical chemistry methods and how to develop them.

Proficiency and ability
After completing the course, students will be able to
- plan and conduct chemical analysis by gravimetry, titrimetry and electrochemistry based on chemical knowledge and basic statistics as starting points,
- apply elemental spectroscopy and chromatography to evaluate and develop analytical methodologies, and
- conduct chemical analysis in a safe way and follow the principles of quality assurance.

Values and attitude
After completion of the course, the student will have the ability to
- describe the scientific characteristics and principal theoretical and experimental development of analytical chemistry, and
- evaluate and criticize experimental results and theoretical interpretations.

Main Content of the Course

Gravimetric and titrimetric methods of analysis as electrochemistry, spectroscopic methods and chromatography as well as quality assurance and applied statistics.

Teaching Methods

The course includes lectures, practical laboratory work and seminars.

Students who have been admitted to and registered on a course have the right to receive tuition and/or supervision for the duration of the time period specified for the particular course to which they were accepted (see, the university's admission regulations (in Swedish)). After that, the right to receive tuition and/or supervision expires.

Examination Methods

Theory, 5 Credits. (Code: 0100)
Written examination

Practical Laboratory Work and Seminars, 2.5 Credits. (Code: 0200)
Participation in laboratory work and seminars (individually or in groups). Written reports.

For further information, see the university's local examination regulations (in Swedish).

Grades

According to the Higher Education Ordinance, Chapter 6, Section 18, a grade is to be awarded on the completion of a course, unless otherwise prescribed by the university. The university may prescribe which grading system shall apply. The grade is to be determined by a teacher specifically appointed by the university (an examiner).

According to regulations on grading systems for first- and second-cycle education (vice-chancellor's decision 2010-10-19, reg. no. CF 12-540/2010), one of the following grades is to be used: fail, pass, or pass with distinction. The vice-chancellor or a person appointed by the vice-chancellor may decide on exceptions from this provision for a specific course, if there are special reasons.

Grades used on course are Fail (U), Pass (G) or Pass with Distinction (VG).

Theory
Grades used are Fail (U), Pass (G) or Pass with Distinction (VG).

Practical Laboratory Work and Seminars
Grades used are Fail (U) or Pass (G).

For further information, see the university's local examination regulations (in Swedish).

Specific entry requirements

A minimium of 11,5 Credits in Basic Chemistry is required.

For further information, see the university's admission regulations (in Swedish).

Transfer of Credits for Previous Studies

Students who have previously completed higher education or other activities are, in accordance with the Higher Education Ordinance, entitled to have these credited towards the current programme, providing that the previous studies or activities meet certain criteria.

For further information, see the university's local credit transfer regulations (in Swedish).

Other Provisions

This course is given partly or entirely in English.

Reading List and Other Teaching Materials

Required Reading

Skoog, Douglas A., West, Donald M., Holler, F. James, Crouch, Stanley R (Senaste upplagan)
Fundamentals of Analytical Chemistry
Belmont: Brooks/Cole, 1072 pages

Additions and Comments on the Reading List

Laborationshandledningar och kopierat material tillkommer/ Laboratory instructions and copied materials will be provided.