

Катедра по химични науки
4004 Пловдив, бул. Братя Бъкстон 120
тел: 032 20 07 51
e-mail: chemical.sciences@ff.mu-plovdiv.bg



Department of Chemical Sciences
120 Bratya Buxton Str., 4004 Plovdiv
Phone: 00359 32 20 07 51
e-mail: chemical.sciences@ff.mu-plovdiv.bg

PROGRAMME
IN ANALYTICAL CHEMISTRY COURSE, II year, III semester, 2026/2027 academic year

Chapters	Hours
Chapter 11. Complex formation equilibria Metal complexes. Composition of metal complexes. Ligands – classification. Stability of complexes. Stability constants. EDTA equilibria. Metallochromic indicators.	2
Chapter 12. Complexometric titration Principle and requirements. Titration curves. Examples. Application in pharmaceutical analysis.	2
Chapter 13. Redox equilibria Redox processes – basic terms. Strength of oxidizing and reducing agents. Electrode potentials. Chemical equilibrium of oxidation-reduction reactions. Factors affecting electrode potential.	3
Chapter 14. Redox titrations Principle and requirements. Titration curves. Examples. Application in pharmaceutical analysis.	4
Chapter 15. Instrumental methods of analysis Principle and classification. Calibration and validation.	2
Chapter 16. Electrochemical methods of analysis Principle, classification, basic terms. Conductometry. Potentiometry. Voltammetry. Amperometric titration. Coulometry. Applications.	5
Chapter 17. Optical methods of analysis Classification. Basic terms. Atomic and molecular spectra. Law of Lambert-Beer. Atomic absorption analysis and atomic emission analysis. UV-VIS molecular absorption spectrometry. Infrared spectroscopy. Applications	6
Chapter 18. Methods of separation and concentration Basic terms. Classification. Liquid – liquid extraction. Application.	2
Chapter 19. Chromatography Basic terms. Classification. PC and TLC. Column chromatography. HPLC. Gas chromatography. Applications.	4

September 10, 2026

Lecturer:
/Assoc.Prof. Z. Velkova, PhD/

Head of Department:
/Prof. K. Gavazov, PhD/