



UNIVERSITATEA
DE MEDICINĂ ȘI FARMACIE
VICTOR BABEȘ | TIMIȘOARA

FACULTY OF PHARMACY

DEPARTMENT I

DISCIPLINES: DRUG ANALYSIS; HISTORY OF PHARMACY (OPTIONAL)

POSITION: FULL PROFESSOR, POSITION 30

TOPICS

1. Drug quality control. Stages of drug control and analysis. Samples preparation for analysis. Methods used in drug control and analysis.
2. Pharmaceutical analysis. Errors in pharmaceutical analysis. Calculations in pharmaceutical analysis. Physical and chemical properties of drug substances.
3. Titrimetric methods in drug analysis. Acid-base titration in aqueous and non-aqueous media. Applications.
4. Titrimetric methods in drug analysis. Compleximetric titrations. Argentimetric titrations. Applications
5. Titrimetric methods in drug analysis. Redox titrations. Karl-Fisher titration.
6. Separation methods in drug analysis. Chromatographic methods in pharmaceutical analysis. Retention and chromatographic parameters.
7. Liquid chromatography. Applications of high-performance liquid chromatography (HPLC) in drug analysis.
8. Liquid chromatography. Size-exclusion chromatography. Applications in pharmaceutical analysis.
9. Liquid chromatography. Ion exchange chromatography. Applications in pharmaceutical analysis.
10. Gas chromatography. Columns and stationary phases used in gas chromatography. Detectors. Derivatisation reactions in gas chromatography.
11. Applications of gas chromatography in pharmaceutical analysis. Kovats retention index. Quantitative analysis.
12. Spectral methods in drug analysis. UV-Visible spectroscopy. Qualitative aspects of UV-VIS absorption spectra.
13. UV-Visible spectroscopy. Quantitative aspects. Applications in drug analysis.
14. Applications of spectral methods in drug analysis. Spectrophotometric analysis of mixtures.
15. Spectral methods in drug analysis. Fluorescence spectrophotometry. Applications.
16. Spectral methods in drug analysis. Mid-Infrared spectroscopy. Applications.
17. Spectral methods in drug analysis. Atomic spectroscopy. Applications.
18. Applications of thermal methods in drug analysis.
19. 18th century Pharmacy: characteristics, development of pharmaceutical education, the first publications.

20. 19th century Pharmacy: the development of pharmaceutical higher education, the transition to industrial production of medicines.
21. 20th century Pharmacy: the discovery of chemotherapeutics and sulfonamides, penicillin and other antibiotics

References:

1. Bojiță, M., Roman, L., Săndulescu, R., Oprean, R., Analiza și controlul medicamentelor, vol. 1., Editura Intelcredo, Deva, 2002
2. Bojiță, M., Roman, L., Săndulescu, R., Oprean, R., Analiza și controlul medicamentelor, vol. 2., Editura Intelcredo, Deva, 2003
3. Imre S., Muntean D.L., Principii ale Analizei medicamentului, Editura University Press, Tirgu-Mureș, 2006
4. Szabadai Z., Sbârcea L., Udrescu, L.. Analiza fizică și chimică a medicamentului vol I, Editura Victor Babeș, Timișoara, 2016
5. Szabadai Z., Sbârcea L., Udrescu, L.. Analiza fizică și chimică a medicamentului vol II, , Editura Victor Babeș, Timișoara, 2021
6. Szabadai, Z., Bazele fizico-chimice ale metodelor de control analitic al medicamentelor, vol. I., Editura Mirton, Timișoara, 2004
7. Szabadai, Z., Bazele fizico-chimice ale metodelor de control analitic al medicamentelor, vol. II., Editura Mirton, Timișoara, 2005
8. Monciu CM, Neagu A, Nedelcu A, Aramă C, Constantinescu C. Analiză chimică în controlul medicamentului, Editura Medicală, București, 2005
9. *** Farmacopeea Română, Ed. X., Editura Medicală, 1998
10. David G Watson. Pharmaceutical Analysis. A Textbook for Pharmacy Students and Pharmaceutical Chemists. Churchill Livingstone Elsevier, 2012
11. Popescu H., Mogoșanu G.D., Istoria Farmaciei, Ed. Sitech, Craiova, 2010
12. Ursoniu S. Istoria farmaciei, Ed. Mirton, Timișoara, 1996