ANALYTICAL CHEMISTRY LECTURE PLAN
for second year students of the Faculty of Pharmacy

IV semester (spring)

1 Quantitative analysis (methods, requirements, value in pharmacy)
2. The basics of gravimetric analysis.
3. Statistical processing and presentation of the results of quantitative analysis.
4. Titrimetric methods of analysis.
5. Acid-base titration.
6. Methods of acid-base titration. Alkalimetry. Acidimetry. Theories of acid-base indicators.
7. Redox titration methods. Permanganatometry. Iodometry
8. Methods of redox titration. Nitritometry, bromatometry, dichromatometry, cerimetry.
9. Precipitation methods. Argentometry.
10. Precipitation methods. Thiocyanometry
11. Methods of complexometry.
12. Titration in non-aqueous media.
13. General characteristics and classification of physico-chemical methods of analysis. Optical methods.
14. Molecular spectral analysis in the visible and ultraviolet (UV) spectral range.
15. Chromatographic analysis methods. Liquid chromatography, HPLC.
16. Electrochemical methods of analysis. Conductometric (conductometry) and potentiometric (potentiometry) methods.
17. Electrochemical methods of analysis. Polarographic (polarography) and coulometric (coulometry) types of analysis, amperometric titration.
18. Review lecture.

The head of Chemistry department, the faculty of Pharmacy **M.V. Mazhitova**

LABORATORY AND PRACTICAL PLAN ON ANALYTICAL CHEMISTRY
for second year students of the Faculty of Pharmacy

IV semester (spring)

1. Quantitative analysis. Gravimetry The decision of settlement problems. Laboratory work 1. Rules for the use of measuring utensils and analytical scales.
2. Titrimetric analysis (with mathematical processing of the analysis results).
3. Acid-base titration. The decision of settlement problems.
4. Laboratory work 2. The method of neutralization. Alkalimetry.
5. Laboratory work 3. Acidimetry. Theories of acid-base indicators.
6. Redox titration. Laboratory work 4. Permanganatometry. The decision of settlement problems.
7. Laboratory work 5. Iodometry. Laboratory work 6. Determination of active chlorine in tablets for disinfection "Chloraktiv".
8. Sedimentary titration. Argentometry. Laboratory work 7. Mohr's method.
9. Sedimentary titration. Laboratory work 8. Folgard's method.
10. Complexometry. Laboratory work 9. Preparation and standardization of a solution of sodium ethylenediaminetetetraacetate (EDTA). The decision of settlement problems.
11. Titration in non-aqueous media. The decision of settlement problems.
12. Colloquium 1. Theoretical foundations of volumetric analysis.
13. Photoelectrocolorimetry. Laboratory work 10. Refractometry of single-component solutions. The decision of settlement problems.
14. Spectrophotometry. Laboratory work 11. Spectrophotometric determination of the resorcinol content in the preparation. The decision of settlement problems.
15. Chromatographic methods of analysis in analytical chemistry. Laboratory work 12. Thin layer chromatography.
16. Electrochemical methods of analysis. The decision of settlement problems.
17. Colloquium 2. Physico-chemical methods of analysis.
18. Test session.

The head of Chemistry department, the faculty of Pharmacy **M.V. Mazhitova**