

Instrumental Analysis I

Lecture-Nr.: 53730

Type: practical course

Duration: 6 hours per week (summer), with seminars

Method of Assessment: written examination (on lab course and accompanying lecture)

ECTS Credit Points: 6

Topics:

Seven experiments corresponding to the theory covered in the lecture "Instrumental Analysis I": 1) Determination of water according to Karl-Fischer; 2) Conductometry: simultaneous determination of a weak and a strong acid; 3) Potentiometry – Part I: potentiometric titration of a weak base and a weak acid; 4) Potentiometry – Part II: simultaneous precipitation titration of chloride and iodide and nitritometric determination of primary aromatic amines; 5) Determination of pK_a : determination of the pK_a and identification of an acid by potentiometry; 6) Flame photometry: determination of sodium or potassium in mineral water; 7) Atomic absorption spectrometry: determination of heavy metals in samples of different origin
A protocol for each experiment has to be written.

Literature:

1. Practical instructions provided as course material
2. Skoog; West; Holler; Crouch: Fundamentals of analytical chemistry. CENGAGE Learning.
3. Skoog; Crouch; Holler: Principles of instrumental analysis. Brooks/Cole.
4. Rücker; Neugebauer; Willems: Instrumentelle pharmazeutische Analytik. WVG, Stuttgart.
5. Dominik; Steinhilber: Instrumentelle Analytik. Deutscher Apotheker Verlag, Stuttgart.
6. Ehlers: Analytik II, Deutscher Apotheker Verlag, Stuttgart.
7. Schwedt: Analytische Chemie: Georg Thieme Verlag, Stuttgart New York:

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