



Subject card

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|---|---|--|--|-------------------------------------|--|---|-----|
| Subject name and code | Instrumental methods in analytical chemistry, PG_00048991 | | | | | | |
| Field of study | Corrosion | | | | | | |
| Date of commencement of studies | February 2023 | Academic year of realisation of subject | | | 2023/2024 | | |
| Education level | second-cycle studies | Subject group | | | Optional subject group Subject group related to scientific research in the field of study | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 1 | Language of instruction | | | Polish | | |
| Semester of study | 2 | ECTS credits | | | 4.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Department of Analytical Chemistry -> Faculty of Chemistry | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Piotr Konieczka | | | | | |
| | Teachers | | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 30.0 | 0.0 | 0.0 | 45 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 45 | | 10.0 | | 45.0 | 100 |
| Subject objectives | The analytical process, instrumental analytical methods (direct and indirect methods); theoretical basis and description of selected instrumental analytical techniques (spectroscopic techniques; chromatographic techniques and related, electroanalytical techniques). | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | | Method of verification | |
| | K7_K01 | | Understands the need to teach | | | [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work | |
| | K7_W04 | | Has a basic knowledge about methods of measurement applicable to studies of corrosive | | | [SW3] Assessment of knowledge contained in written work and projects | |
| | K7_U01 | | Can obtain an information from the literature, databases, and other, properly selected sources | | | [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools | |
| Subject contents | Flame photometry, ASA, GC, TLC and LC, Elektroanalityczne, calibration Techniques, QA/QC | | | | | | |
| Prerequisites and co-requisites | Basic knowledge of analytical chemistry on the theory of instrumental methods of analysis. | | | | | | |
| Assessment methods and criteria | Subject passing criteria | | Passing threshold | | Percentage of the final grade | | |
| | laboratory | | 60.0% | | 60.0% | | |
| | lecture | | 60.0% | | 40.0% | | |

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| Recommended reading | Basic literature | 1. A. Cygański, Metody spektroskopowe w chemii analitycznej, WNT, Warszawa, 2002. 2. Z. Witkiewicz, J. Hepter, Chromatografia gazowa, WNT, Warszawa, 2009. 3. W. Szczepaniak, Metody instrumentalne w analizie chemicznej, PWN, Warszawa 2008. |
| | Supplementary literature | Literature of the subject of analytical instrumental methods |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | <ol style="list-style-type: none"> 1. What characterizes a reliable analytical result? 2. Specify the range of applications of Certified Reference Materials. 3. Point out the systems for inserting the sample into the chromatographic column. 4. What determines the elution sequence in the case of the liquid chromatography technique in the reversed phase system. 5. Give the characteristics of the conductivity technique. | |
| Work placement | Not applicable | |