

(Table 5.2) Course unit description

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| Study program: Chemistry | | | |
| Type and level of studies: Doctoral academic studies | | | |
| Course unit: Medicinal inorganic chemistry | | | |
| Teacher in charge: Prof. Dr. Miloš I. Djuran | | | |
| Language of instruction: <i>English</i> | | | |
| ECTS: 10 | | | |
| Prerequisites: Student of doctoral academic studies | | | |
| Semester: <i>Summer Semester</i> | | | |
| Course unit objective | | | |
| Acquiring the students with the potential application of metal complexes in medicine. | | | |
| Learning outcomes of Course unit | | | |
| After this course the student would be able to understand the possible practical application of the knowledge from this discipline in medicine, pharmacy and in own scientific work. | | | |
| Course unit contents | | | |
| <i>Theoretical classes</i> | | | |
| Introduction to medicinal inorganic chemistry. Metal complexes as therapeutic agents (platinum, silver, gold, ruthenium and vanadium complexes). Metal-based radiopharmaceuticals. Metal complexes as MRI contrast agents (gadolinium, manganese and iron complexes). Chelation therapy as a medical procedure that involves the administration of chelating agents to remove heavy metals from the body. Metals in the body: essential elements. Mechanism of action of metal complexes (metal-protein and metal-DNA interactions). Metal complexes as artificial metallopeptidases (platinum(II) and palladium(II) complexes). | | | |
| Literature | | | |
| 1. Bioinorganic Medicinal Chemistry, Ed. by E. Alessio, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, 2011. | | | |
| 2. The Biological Chemistry of the Elements: The Inorganic Chemistry of Life, Ed. by J. J. R. Fraústo da Silva and R. J. P. Williams, Clarendon press, Oxford, New York, 1991. | | | |
| 3. Principles of Bioinorganic Chemistry, Ed. by S. J. Lippard and J. M. Berg, Univesity Science Books, Mill Valley, California, 1994. | | | |
| Number of active teaching hours | | | Other classes |
| Lectures: 5 | Practice: | Other forms of classes: | |
| Teaching methods | | | |
| Lectures and seminars. | | | |
| Examination methods (maximum 100 points) | | | |
| Exam prerequisites | No. of points: | Final exam | No. of points: |
| Student's activity during lectures | 10 | oral examination | <i>60</i> |
| practical classes/tests | | written examination | |
| Seminars/homework | 30 | | |
| Project | | | |
| Other | | | |
| Grading system | | | |
| Grade | No. of points: | Description | |
| 10 | 91-100 | Excellent | |
| 9 | 81-90 | Exceptionally good | |
| 8 | 71-80 | Very good | |
| 7 | 61-70 | Good | |
| 6 | 51-60 | Passing | |
| 5 | 0-50 | Failing | |