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| ***course title*** | ***Inorganic chemistry [MA. Chemistry]*** |
| ***course code*** | Ķīmi5001 |
| ***branch of science*** | chemistry |
| ***science sub-sector*** | inorganic chemistry |
| ***credits*** | 4 |
| ***ECTS*** | 6 |
| ***The total audience hours*** | **64** |
| ***Number of lectures*** | 32 |
| ***Laboratory works*** | 32 |

Dr.paed.doc. Mikhail Gorskis
Professional Master's degree in education Anna Anisimova
Dr.chem.viesprof. John Švirksts

***course summary***

The course aims to provide students with in-depth knowledge of the transition and inner transition element chemistry, focusing on their makers coordination compounds, their structure and formation theories, extraction techniques and responsive. As a single component are considered cluster and organometallic compounds, and molecular and ionic spatial conformation and point symmetry grouping methods and inorganic compounds of the distribution possibilities in nanotechnology.

***Results***

Upon successful completion of the course, students: - are familiar with molecules and ions. The symmetry of the symmetry group is characterized by the platinum family and the internal transition chemical elements and their typical compounds of oxygen and halogens, describes the radioactive elements and their compounds types and characteristics, characterized by cluster design and their chemical nature, Structural theories, the most typical representatives of complex compounds pathways and properties of complex compounds, are characterized by a spatial structure, predicting the color and magnetic properties, methods of obtaining, - knows hard / soft acid-base theory, using different connection methods for the synthesis of forecasting - in writing and orally present the results of investigations, This uses the Latimer and Frost diagrams for chemical compound stability and reactivity characterization.

***course plan***

Course structure: Lectures - 32 h., Colloquia - 2 laboratory works - 32 hours.

Lecture topics: 1.Molekulu and ion spatial structure and symmetry 6 hours. 2.Platīna family of elements and their compounds 4 hours. 3.Radioaktivitāte, radioactive elements and their properties 4 hours. 4.Iekšējās transition elements (f-elements) and compounds 4 hours. 5.Koordinācijas connections 4 hours. 6.Klasteri 4 hours. 7.Nanotehnoloģijas inorganic chemistry 6 hours.
Seminars / practical work / laboratory work topics: 1.Platīna family of elements and their compounds 6 h. 2.Radioaktivitāte, radioactive elements and their properties 6 hours. 3.Inner transition elements (felements) and compounds 6 h. 4.Koordinācijas connections 6 hours. 5.Klasteri 4 hours. 6.Nanotehnoloģijas inorganic chemistry 4 hours.

***Requirements for credits***

During the semester have been developed and the successful scale evaluation of all the course program provided for laboratory work, successfully passed 2 tests and successfully passed a written exam on course completion. The final mark of the course consists of the following results: (1) the exam - 40%, (2) laboratory work obtained Ratings - 50%, (3) on tests obtained ratings - 10%, provided that each of the total marks component rating should not be lower than 4 points. The final mark lecturer is determined by summing the course received during evaluations (grades) exam, test and laboratory work, extending the results obtained% against the particular course the maximum number of points available. In the case of the student course during all the tasks carried out by the evaluation "9 (excellent)" or "10 (excellent)"

***contents***

Molecules and ions of the spatial structure and symmetry. Platinum family elements and their compounds. Radioactivity, radioactive elements and their properties. Inner transition elements (f-elements) and their compounds. Coordination compounds. Clusters. Nanotechnology inorganic chemistry.

***Basic training***

1.Catherine E. Housecroft and Alan G. Sharpe. Inorganic chemistry. Harlow: Pearson / Prentice Hall, 2008th

***Further reading***

1.S. Cotton. Lanthanide and Actinide Chemistry. Wiley, 2006 2.U. Muller. Structural Inorganic Chemistry. 2nd ed., Wiley, 2007 3.Gass G., H. Sutcliffe, Practical Inorganic Chemistry, Science Paper backs, Chapman and Hall, London, 1979 4.Miesler Gary L. and Donald A. Tarr Inorganic Chemistry. Prentice Hall, Upper Saddle River, New Jersey 2004 5.Cotton, FA, Wilkinson, G., Murillo, CA Bochmaann, M., Advanced

Inorganic Chemistry, John Wiley & Sons, Inc., New York etc. 1999 6.Shriver DE and PW Atkins, Inorganic Chemistry, Oxford University Press, 2006 7.Huheey James E., et al, Inorganic Chemistry, Harper Collins, New York, 1993. 8.Лидин Р. А., Молочко В. А., Андреева Л. Л. Химические свойства неорганических веществ. Москва: КолосС, 2008th

***Periodicals and other information sources***

1.www.webelements.com. 2.King, R. Bruce. Encyclopedia of Inorganic Chemistry. 2nd ed., Wiley, 2005 3.Journal of Inorganic Chemistry Letters 4.Tetrahedron 5.Tetrahedron 6.Journal of the American Chemical Society Chemistry journal 7.Latvijas

***Remarks***

AMSP "Chemistry" Part A

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|---|---|
| ***Course title*** | ***inorganic chemistry*** |
| ***Course code*** | Ķīmi5001 |
| ***Credit points*** | 4 |
| ***ECTS creditpoints*** | 6 |
| ***Total Contact Hours*** | **64** |
| ***Number of hours for lectures*** | 32 |
| ***Number of hours for laboratory assignment*** | 32 |

***Course abstract***

Course of inorganic chemistry focuse on the classification of compounds based on Their properties. Partly the classification focuse on the position in the Periodic Table of the heaviest element (the element with the Highest atomic weight) in the compound, partly by grouping compounds by Their structural similarities. When studying inorganic compounds, one encounters Often parts of the Different classes of inorganic chemistry (an Organometallic compound is characterized by its Coordination chemistry, and May show interesting solid state properties).