Table S2.6.4. Form for the preparation of the course information sheets				
Name of the subject	*Metal complexes and their application*			
Code of the subject	**Status of the subject**	**Semester**	**Number of ECTS credits**	**Class load**
	Elective course	2	2	

STUDY PROGRAMME FOR WHICH IT IS ORGANIZED:
PhD Program "Natural sciences and Technology for Sustainable Development",

DEPENDENCY BY OTHER SUBJECTS:
No

OBJECTIVES OF STUDYING THIS SUBJECT:
The objective of this course is for students to understand one very important group of compounds with application use and potentially new application use in medicine, pharmacy, industry, agriculture.

Contents of the subject (teaching units, forms of students' individual work, forms of testing) presented per working weeks in the academic calendar:

Preparatory week	
I week	Classification of ligands, classification of complex compounds
II week	New Ligands And New Complex Compounds
III week	Geometric structures and isomerism in complex compounds
IV week	Synthesis methods for complex compounds
V week	Properties of complex compounds
VI week	Spectroscopic methods-techniques for characterizing complex compounds - NMR
VII week	Spectroscopic methods-techniques for characterizing complex compounds - NQR, EPR, ESR
VIII week	Spectroscopic methods-techniques for characterizing complex compounds -X-Ray
IX week	Spectroscopic methods-techniques for characterizing complex compounds - Raman
X week	Spectroscopic methods-techniques for characterizing complex compounds - FTIR
XI week	Some aspects of bioinorganic chemistry
XII week	Groups of ligands and their selected complexes - applications in medicine
XIII week	Groups of ligands and their selected complexes - application in pharmacy
XIV week	Groups of ligands and their selected complexes - applications in agriculture
XV week	Ligand groups and their selected complexes - industrial applications

METHODS OF EDUCATION:
Lectures, project based teaching, experimental lab work

STUDENTS' LOAD

Weekly	**In semester**
5 credits x 40/30 = 6 hours and 40 minutes **Structure:** **2** hours of **lectures** **0** hours of **exercises** **1** hours of **practical work**	**Lectures and final exam:** (6 hours and 40 minutes) x 16 = 106 hours and 40 minutes **Necessary preparations before the start of the semester:** *(administration, enrolment, verification)* 2 x (6 hours and 40 minutes) = 13 hours and 20 minutes **Total subject load:** 5 x 30 = 150 hours

3 hours and **40** minutes of **individual work, including consultation**	**Additional hours for preparing correction of final exam, including the taking of the exam:** 150h - (120h) = 30h **Load structure:** 106 hours and 40 minutes (Lectures) + 13 hours and 20 minutes (Preparation) + 30 hours (Remedial classes)

STUDENTS' OBLIGATIONS DURING THE TEACHING:

Students are obliged to attend lectures and laboratory exercises

LITERATURE:

S.F.A. Kettle, Physical Inorganic Chemistry Oxford University Press, 1998,
Vasishta Bhatt Essentials of Coordination Chemistry Academic Press, 2015
P. L. Soni, V. Soni, Metal Complexes: Transition Metal Chemistry with Lanthanides and Actinides Publisher: CRC Pr I Llc, 2013
A. Takashiro, Basic Concepts Viewed from Frontier in Inorganic Coordination Chemistry, BoD – Books on Demand, 2018
Ž.Jaćimović, Unpublished materials

LEARNING OUTCOMES (COMPLIED WITH THE OUTCOMES FOR THE STUDY PROGRAMME):

Demonstrates a theoretical and practical knowledge and understanding of:

Upon completion of this course the student will be able to:
He understands the geometric structures and isomerism of complex compounds as an important aspect of the properties obtained.
He knows the particular classes of ligands and their complexes
Knows and compares techniques for characterizing complexes
Analyzes differences and similarities between individual ligands and complexes in structural type and therefore in properties and applications
Selects complex compounds according to practical and potentially practical use

Transferable / Key Skills and other attributes:

Laboratory skills: Laboratory synthetic work skills and the use of methods - techniques for characterizing complexes

FORMS OF TESTS AND EVALUATION:

Completed lab work	35%
Written examination	50%
0ther activities (homeworks…).	15%

NAME AND SURNAME OF TEACHER AND ASSOCIATE:

Prof. Željko Jaćimović, Prof. Nedeljko Latinovic

PARTICULARITIES NEEDED TO BE EMPHASIZED FOR THE SUBJECT:

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***Note (if needed)*:**

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