

Study program : Chemistry			
Type and level of studies: Master academic studies			
<b>Course unit: Organometallic chemistry</b>			
<b>Teacher in charge : Professor Dr Zoran Ratković</b>			
Language of instruction: <i>English</i>			
ECTS: 6			
Prerequisites: Student of master academic studies			
Semester: <i>Summer Semester</i>			
<b>Course unit objective</b>			
Course objectives are to teach students the knowledge and skills which will enable them to complement their existing knowledge of inorganic and organic chemistry essential for organometallic chemistry.			
<b>Learning outcomes of Course unit</b>			
To familiarize students with the theoretical and synthetic aspects of organometallic chemistry, with the preparation, structure and chemical properties of organometallic compounds which are widely used in catalysis and in modern synthetic organic chemistry. Knowledge gained in this course will enable students to take a stand on organometallic compounds and many modern industrial processes and intermediates. Students will assume new working techniques and synthetic skills for the preparation of certain organometallic compounds. They will be able to synthesize some organometallic compounds and apply them in organic synthesis of various materials.			
<b>Course unit contents</b>			
<i>Theoretical classes</i>			
Organometallic compounds: concept and historical overview (discovery of certain organometallic compounds and processes in which they participate). Energy, polarity and reactivity of metal-carbon bond. Classification of organometallic compounds. Features and reactions of organometallic compounds of main group elements. Organometallic compounds of the group of transition elements; Rule of 18 valence electrons (VE-18 rule) and the types and kinds of ligands. Synthesis, structure and chemical reactions of organometallic compounds. The catalytic applications of organometallic synthetic derivatives; some industrial processes with organometallic compounds.			
<i>Practical classes</i>			
Synthesis of certain organometallic compounds and their reactions. Some procedures with organometallic intermediates.			
<b>Literature</b>			
1. G. O. Spessard, G. L. Miessler, Organometallic Chemistry, Prentice Hall, 1997.			
2. A. Togni, T. Hayashi: Ferrocenes: Homogeneous Catalysis/Organic Synthesis/Materials Science, Wiley-VCH Verlag GmbH, 1995.			
3. Ch. Elschenbroich, A. Salzer, Organometallics, VCH 1991.			
<b>Number of active teaching hours</b>			<b>Other classes</b>
Lectures: 2	Practice: 2	Other forms of classes: Independent work:	
<b>Teaching methods</b>			
Lectures, seminars and practical classes.			
<b>Examination methods ( maximum 100 points)</b>			
<b>Exam prerequisites</b>	<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>
Student's activity during lectures	10	oral examination	60
practical classes/tests	20	written examination	
Seminars/homework	10	.....	
Project			
Other			
<b>Grading system</b>			
<b>Grade</b>	<b>No. of points</b>	<b>Description</b>	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	

<b>7</b>	<b>61-70</b>	Good
<b>6</b>	<b>51-60</b>	Passing
<b>5</b>	<b>0-50</b>	Failing

**(Table 5.2) Course unit description**