

(faculty stamp)

**COURSE DESCRIPTION**

<b>1. Course title:</b> INTRODUCTION TO MATERIALS		<b>2. Course code:</b>		
<b>3. Validity of course description:</b> 2019/2020				
<b>4. Mode of studies:</b> intramural studies				
<b>5. Level of studies:</b> BSc studies				
<b>6. Field of study:</b> Industrial and Engineering Chemistry				
<b>7. Profile of studies:</b> academic				
<b>8. Programme:</b> -				
<b>9. Semester:</b> IV				
<b>10. Faculty teaching the course:</b> RCh-3, Department of Chemical Engineering & Process Design				
<b>11. Course instructor:</b> Magdalena Stec, PhD				
<b>12. Course classification:</b>				
<b>13. Course status:</b> compulsory				
<b>14. Language of instruction:</b> English				
<b>15. Pre-requisite qualifications:</b> Chemistry – basic knowledge, Physics – basic knowledge				
<b>16. Course objectives:</b> main goals are the knowledge of available construction materials used for the production of industrial equipment, together with the restrictions of Office of Technical Inspection (UDT)				
<b>17. Description of learning outcomes:</b>				
No	Learning outcomes description	Method of assessment	Teaching methods	Learning outcomes reference code
1.	Student has the knowledge of the available construction materials and their proper selection during the apparatus/system designing stage	lectures	credit test	<b>K_W03+</b>
2.	Student has the knowledge in the field of Office of Technical Inspection (UDT) restrictions and regulations	lectures	credit test	<b>K_W17+</b> <b>K_U15+</b>
3.	Student has the knowledge of the methods used in anti-corrosion protection	lectures	credit test	<b>K_W12+</b> <b>K_U16+</b>
4.	Student can find and use available literature/databases required for the proper selection of the construction material	lectures	credit test	<b>K_U01+</b>

5.	Student understands the necessity of further professional training and the development of professional and own competence	lectures	credit test	<b>K_K01+</b>	
<b>18. Teaching modes and hours</b>					
	Lecture	Classes	Laboratory	Project	Seminar
	30				
<b>19. Syllabus description:</b>					
<ol style="list-style-type: none"> <li>1. Types of construction materials</li> <li>2. Office of Technical Inspection (UDT) restrictions and regulations</li> <li>3. Metals and their alloys</li> <li>4. Steel – types, methods of treatment and their impact on structural properties</li> <li>5. Ceramics, composites, carbon materials</li> <li>6. Glass and plastics</li> <li>7. The use of materials and plastics during the production of apparatus and other industrial devices</li> <li>8. Anti-corrosion protection</li> </ol>					
<b>20. Exam:</b> no					
<b>21. Primary sources:</b>					
<ol style="list-style-type: none"> <li>1. Doran D., Cather B., „Construction materials reference book” Routledge, New York, 2013</li> <li>2. Dobrzański L. „Podstawy nauki o materiałach i metaloznawstwo” WNT ,Warszawa, 2002</li> <li>3. Dobrzański L. „Materiały inżynierskie i projektowanie materiałowe” WNT, Warszawa, 2006</li> <li>4. Pikoń J. „Podstawy konstrukcji aparatury chemicznej. Część 1 – Tworzywa konstrukcyjne”, Wyd. Pol. Śl., Gliwice, 1973</li> </ol>					
<b>22. Secondary sources</b>					
<ol style="list-style-type: none"> <li>1. UDT (Office of Technical Inspection) regulations</li> </ol>					
<b>23. Total workload required to achieve learning outcomes</b>					
No	Teaching mode	Contact hours/Student workload hours			
1.	Lectures	<b>30/60</b>			
2.	Class	/			
3.	Laboratory	/			
4.	Project	/			
5.	BA/MA seminar	/			
6.	Other	/			
	Total number of hours	<b>30/60</b>			
<b>24. Total hours:</b>			<b>90</b>		
<b>25. Number of ECTS credits:</b>			<b>2</b>		
<b>26. Number of ECTS credits allocated for contact hours:</b>			<b>2</b>		
<b>27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects):</b>			<b>0</b>		
<b>28. Comments:</b>					

Approved:

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*(date and Instructor's signature)*

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*(date, the Director of the Faculty Unit signature)*

<sup>1</sup> 1 ECTS point – 25-30 student workload hours