

<b>Course Information Sheet</b>	
<b>University:</b> <i>University of Presov</i>	
<b>Faculty:</b> <i>Faculty of Humanities and Natural Sciences</i>	
<b>Code:</b> 2EKO/DZECH2X/22	<b>Title of Course:</b> <b>Green Chemistry 2</b>
<b>Form of Study:</b> <i>lectures 2 hours per week, seminar and laboratory course 2 hour per week</i>  <b>Number of contact hours:</b>  <b>per week:</b> 2+2 <b>per level/semester:</b> <i>20 hours lectures, 20 hours seminars, 260 hours self-study</i>  <b>Method of study:</b> <i>full-time study</i>	
<b>Number of credits:</b> <i>10</i>	
<b>Semester:</b> <i>1-8.</i>	
<b>Degree/Level:</b> <i>3.</i>	
<b>Prerequisites:</b> -	
<b>Grading Policy (Assessment/Evaluation):</b>  <i>Final exam 70 %.</i>  <i>Continuous semestral examination during seminars 30 %.</i>  <i>Success criteria (percentage):</i> <i>a) Passed - 100.00 - 50.00%</i> <i>f) Not-passed - 49.99 and less%.</i>	
<b>Aims and Objectives:</b>  After the completion of this course, students will:  <i>- understands the principles of sustainable development and green chemistry;</i> <i>- able to use new trends in "green" technologies in the creation of hypotheses, planning of experiments;</i> <i>- able to introduce the Green chemistry principles to conception of dissertation project.</i>	
<b>Syllabus/Indicative Content:</b>  <i>1. Definition of concepts and principles for green chemistry.</i> <i>2. An introduction of the historical background of Green Chemistry.</i> <i>3. Case-studies in Green and Environmental Chemistry (sustainable development).</i> <i>4. Identification of issues that Green Chemistry could solve.</i> <i>5. Inorganic health- and environmental pollutants.</i>	

6. Organic health- and environmental pollutants.

7. Waste treatment. Case-studies.

8. The role of Green Chemistry in large scale production of organic chemicals (catalysis/biocatalysis, selection of raw materials and solvents/process evaluation).

9. Production of biofuels.

10. Green synthesis of nanomaterials. Trends and benefits.

11. Green preparation of carbon materials.

12. Green solvents. Solvent free technologies.

13. Organic reactions in aqueous and greener non-aqueous media.

Self-study:

1. Calculations in green chemistry.

**Suggested readings:**

1. J.H. Clark and D. MacQuarrie. *Handbook of Green Chemistry and Technology*. 2002, ISBN: 0632057157. 560p.

2. M. Lancaster. *Green Chemistry*. 2010, ISBN: 0854046208, 310 P.

3. P.T. Anastas, Chao-Jun Li. *Handbook of Green Chemistry*. Vol. 1-5: 2010, ISBN:3527315748. 410 p.

**Language of Instruction:** slovak

**Other course information:**

**Grading history**

A	B	C	D	E	FX
0%	0%	0%	0%	0%	0%

**Lecturer/Instructor:**

Doc. Ruslan Mariychuk, PhD. - lectures

RNDr. Romana Smolková, PhD. – seminars, laboratory course

**Last update:** 18. September 2023

**Approved by:** uvádza sa meno a priezvisko zamestnanca vysokej školy (štandardne garant študijného programu), ktorý zmenu schválil