

<b>The basic data of the subject</b>	
<b>Academic Unit:</b>	<b>Faculty of Architecture, Design and Wood Technology</b>
<b>Program:</b>	<b>Green Architecture and Interior Design</b>
<b>The title of the subject:</b>	<b>Life Cycle Assessment</b>
<b>Level:</b>	<b>Master</b>
<b>The status of the subject:</b>	<b>Mandatory</b>
<b>Year of study:</b>	<b>I</b>
<b>Number of hours per week:</b>	<b>3</b>
<b>ECTS:</b>	<b>6</b>
<b>Professor</b>	<b>Prof.Dr. Agron Bajraktari</b>
<b>Contact</b>	<b>agron.bajraktari@ushaf.net</b>
<b>Description of the subject:</b>	
	<p>The subject is part of the curriculum, given that the growing trend for environmental protection, has made the market to prefer products with minimal negative impact on the environment. This has forced companies to improve their environmental performance using new management methods. One such method is LCA (Life Cycle Assessment Analysis), on which decision-making strategies are based to have products that pollute the environment as little as possible and that require as little raw materials and energy as possible. produced. The main objective of the subject is to develop the ability to assess the environmental impact, and not only, that causes (accompanies) a product, process or production activity.</p>
<b>Purpose of the subject:</b>	
	<p>The aim of the course is to study the materials and their environmental polluting values that accompany the products with wooden batons and other materials, their impact and evaluation. Also through this subject the student will be introduced to the cost of the life cycle, in order to be able to make decisions as realistic as possible in different product design situations.</p>
	<p>Upon completion of this subject, students will be able to:</p> <ul style="list-style-type: none"> <li>• explain the purpose and principles of the LCA, as well as its possible applications and limitations;</li> </ul>

<b>Expected learning outcome:</b>	<ul style="list-style-type: none"> <li>describe the content and explain the purpose of the LCA analytical stages;</li> <li>perform a complete LCA for a wood product, applying the relevant software;</li> <li>compile a report on the performed LCA, according to the instructions and terminology defined in the respective ISO standards.</li> </ul>		
<b>Contribution to the student's workload (which should correspond to the student's learning outcomes)</b>			
<b>Activity</b>	<b>Hours</b>	<b>Days/week</b>	<b>Total</b>
Lectures	3	14	42
Theoretical/laboratory exercises			
Practical work	2	5	10
Contacts with the professor/consultations	1	6	6
Other exercises	3	3	9
Test/seminars	2	1	2
Homework	2	10	20
Student study time (in library or at home)	6	5	30
Final preparation for examination	6	4	24
Time spent on assessment (tests, quiz, final exam)	2	2	4
Projects, presentations	3	1	3
<b>Total</b>			<b>150</b>
<b>Teaching methodology</b>	Lectures and exercises combined with case studies and class discussions		
<b>Methods of assessment</b>	30% Seminar 70% Final exam		
<b>Literature</b>			
<b>Basic literature</b>	<ol style="list-style-type: none"> <li>Scott Matthews, Hendrickson, Deanna Matthews: LifeCycle Assessment – Quantitative Approaches for Decisions;</li> <li>Ajdinaj D (2021). Skriptë.</li> </ol>		
<b>Additional literature</b>	<ol style="list-style-type: none"> <li>Michael Z. Hauschild, Ralph K. Rosenbaum, Stig Irving Olsen - Life Cycle Assessment, Theory and Practice;</li> </ol>		

	2. ISO 14040 (2006): Environmental management – Life cycle assessment – Principles and framework, International Organisation for Standardisation (ISO), Geneva.
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<b>Described Learning Plan:</b>	
<b>Weeks</b>	<b>Lecture to be taught</b>
<b>Week 1</b>	Introduction
<b>Week 2</b>	Product Life Assessment (LCA) Concepts
<b>Week 3</b>	LCA methodology, determination of the aim and setting scope
<b>Week 4</b>	Quantitative and qualitative methods in support of life cycle analysis
<b>Week 5</b>	Databases, evaluation and calculation
<b>Week 6</b>	Construction of quantitative models
<b>Week 7</b>	Three-step method for quantitative and qualitative evaluation
<b>Week 8</b>	Life cycle cost analysis
<b>Week 9</b>	Discounting of future values from current ones
<b>Week 10</b>	Life cycle inventory
<b>Week 11</b>	Uncertainty and variability in the LCA
<b>Week 12</b>	LCA through input-output economic models
<b>Week 13</b>	Advanced life cycle models
<b>Week 14</b>	LCA Impact Assessment
<b>Week 15</b>	Interpretation of LCA results

<b>Academic Policies and Rules of Conduct:</b>
<i>Regular attendance, keeping calm and active engagement in dialogue during lectures and exercises is mandatory.</i>