Curriculum at LAB University of Applied Sciences
2021-2022

Master of Engineering, Sustainable construction 21S, Lappeenranta

Code	Name	1 y	ECTS total
YKR21SLPR-1004 Core competence			**20**
YT00CB69	Sustainable construction process	5	5
YKR21SLPR-1005 Construction processes in circular economy			**15**
YT00CB70	Technical and biological circles in building process	5	5
YT00CB71	Business of circular economy	5	5
YT00CB72	Circular economy as added value in construction business	5	5
YKR21SLPR-1007 Complementary Competence			**10**
YT00CB76	BIM		0
YKR21SLPR-1003 Thesis			**30**
YO00BU70	Thesis Planning	10	10
YO00BU71	Thesis Project and Reporting	20	20

YKR21SLPR-1004 Core competence: 20 ECTS

YT00CB69 Sustainable construction process: 5 ECTS

Learning outcomes
The student understands the formation of the value chain in the construction industry, the roles of different parties, the change in traditional forms of contract and the possibilities of new business in the construction and real estate industry.
The student is able to determine the points in the value chain where sustainable material, product and construction solutions could be used. The student knows how legislation, good construction practice and customer choices affect carbon-neutral construction.

YKR21SLPR-1005 Construction processes in circular economy: 15 ECTS

YT00CB70 Technical and biological circles in building process: 5 ECTS

Learning outcomes
The student is able to define the components of the biological cycle: bio-based materials in the process, such as wood, bioplastic and recycled countries, as well as their logistics and handling solutions. The student understands technological applications from the perspective of logistics, self-sufficient energy production and the development ofrenewable energy.

YT00CB71 Business of circular economy: 5 ECTS

Learning outcomes
The student understands the business potential of the circular economy and is able to look at both products and processes from a business perspective. The student is able to develop a new business based on one of the following aspects of the circular economy: ownership, utilisation rates, financing models, cost life cycle, sharing economy or a completely new technology-based business.

YT00CB72 Circular economy as added value in construction business: 5 ECTS

Learning outcomes
The student is able to integrate circular economy thinking into the construction process, knows the principle of standardisation and key standards, legislation and CE markings. The student is able to describe supply chain management from the perspective of circular economy. The student is acquainted with the tools in use and is able to apply at least one tool to bring the circular economy into the construction value chain.

YKR21SLPR-1007 Complementary Competence: 10 ECTS

YT00CB76 BIM: 5 ECTS

Learning outcomes
The student will learn about building information modelling philosophy, standardisation, and key tools.
The student demonstrates their ability to utilise information modelling as part of the design process and is able to describe the usability of information modelling at different stages of the life cycle. The student is able to describe the interfaces between different design systems and the instructions for data transfer and data model-based operation.

YKR21SLPR-1003 Thesis: 30 ECTS

YO00BU70 Thesis Planning: 10 ECTS

Learning outcomes
The student is able to
- describe the objectives and core contents of their thesis
- plan and describe the stages of the thesis process
- take into account the possible research permit and copyright issues.

YO00BU71 Thesis Project and Reporting: 20 ECTS

Learning outcomes
The student is able to
- implement the thesis on the basis of an approved thesis plan
- present the results or output of their thesis
- report on their thesis in writing in accordance with the thesis guidelines of LAB University of Applied

Sciences
- as a maturity test, write a blog post, a press release or an article.