

## Curriculum at LAB University of Applied Sciences 2021-2022

### Bachelor of Engineering, Civil and Construction Engineering, Double Degree, Lappeenranta

Code	Name	1 y	2 y	ECTS total
<b>CIV21SDDLPR-1002 PROFESSIONAL STUDIES</b>				<b>35</b>
KTE2350	Cultural Studies for Construction	5		5
KTE2351	Building Engineering and Renovation	5		5
KTE2266	Structural Engineering	5		5
KTE2352	Building Physics and Energy Efficiency	5		5
KTE2268	BIM in Building Processes	5		5
KTE2353	Project Work	5		5
AT00CC79	International Project Management	5		5
<b>CIV21SDDLPR-1004 ELECTIVE STUDIES</b>				<b>0</b>
<b>CIV21SDDLPR-1005 PLACEMENT</b>				<b>10</b>
AT00CF01	Placement	10		10
<b>CIV21SDDLPR-1006 THESIS</b>				<b>15</b>
AO00CE85	Thesis planning	5		5
AO00CE86	Thesis research and writing	5		5
AO00CE87	Thesis publication	5		5

#### **CIV21SDDLPR-1002 PROFESSIONAL STUDIES: 35 ECTS**

#### **KTE2350 Cultural Studies for Construction: 5 ECTS**

##### **Learning outcomes**

The student is able to

- understand and use civil and construction engineering English in international building projects
- give presentations and write reports in English
- understand Finnish culture and use the basics of Finnish language.

#### **KTE2351 Building Engineering and Renovation: 5 ECTS**

##### **Learning outcomes**

Contents  
Building engineering and renovation projects in general  
Typical structure parts (wall, floors etc.) and frames  
Compulsory parts on buildings (windows, doors, etc.)  
Typical buildings in Finland from the 1800`s to now.  
Fire legislation in Finland  
Moisture insulations  
BIM in renovations  
renovation examinations and field testing  
Indoor climate fixings

## **KTE2266 Structural Engineering: 5 ECTS**

### **Learning outcomes**

Contents  
The Finnish field of civil engineering, why is Finland different  
The basics of the design and building structures  
The design documents of structures  
The different type of structures: Columns, Slabs, Beams  
The different type of manufacturing  
Contents concrete  
The basics of the design and building of reinforced concrete structures  
The design documents of reinforced concrete structures  
The characteristics of reinforced concrete  
The different type of concrete structures: Columns, Slabs, Beams, Tensioned structures  
The different type of concrete manufacturing  
Cast on site  
Prefabricated constructions  
Contents steel  
The basics of the design and building of steel structures  
The design documents of steel structures  
The characteristics of steel structures  
The different type of steel structures: Columns, Slabs, Beams  
The steel manufacturing  
Contents composite structures  
The basics of the design and building of composite structures  
The characteristics of composite structures  
The different type of composite structures: Columns, Slabs, Beams  
Contents of wood structures  
The basics of the design and building of wood structures  
The characteristics of wood materials and structures  
The different type of wood structure systems in houses: small houses, halls, block of flats, special structures  
Manufacturing processes of basic wood materials and prefabricated elements

## **KTE2352 Building Physics and Energy Efficiency: 5 ECTS**

### **Learning outcomes**

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## **KTE2268 BIM in Building Processes: 5 ECTS**

### **Learning outcomes**

- Learn processes of open BIM in construction and civil engineering and how to use models in projects
- Learn how to use basic tools of BIM

## **KTE2353 Project Work: 5 ECTS**

### **Learning outcomes**

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## **AT00CC79 International Project Management: 5 ECTS**

### **Learning outcomes**

A student will be able

to use practical tools and techniques to plan, deliver and monitor a project  
to demonstrate commitment to quality, timeliness, and continuous improvement  
to function effectively as a member or a leader in international construction teams  
to demonstrate commitment to quality, timeliness, and continuous improvement  
to apply key principles of green project management in construction field

**CIV21SDDLPR-1004 ELECTIVE STUDIES: 0 ECTS**

**CIV21SDDLPR-1005 PLACEMENT: 10 ECTS**

**AT00CF01 Placement: 10 ECTS**

**CIV21SDDLPR-1006 THESIS: 15 ECTS**

**AO00CE85 Thesis planning: 5 ECTS**

**Learning outcomes**

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.

**AO00CE86 Thesis research and writing: 5 ECTS**

**Learning outcomes**

Student is able to

- implement the thesis on the basis of an approved thesis plan.

**AO00CE87 Thesis publication: 5 ECTS**

**Learning outcomes**

Student is able to

- 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
- write a maturity test.