

## Curriculum at Lahti University of Applied Sciences 2019-2020

### Bachelor of Engineering, Wood Technology

Code	Name	1 y	2 y	3 y	4 y	ECTS total
<b>TEPUU19S-1000 CORE COMPETENCE</b>						<b>180</b>
<b>TEPUU19S-1001 Common Core Competence</b>						<b>25</b>
LA00BE73	English for Work		3			3
LA00BE74	Swedish language, Oral Communication	1				1
LA00BE75	Swedish language, Written Communication	2				2
LA00BE76	Professional communication	4				4
LA00BE77	Developing professional competence 1	5				5
LA00BQ87	Developing professional competence 2		2			2
LA00BQ88	Developing professional competence 3			1		1
LA00BE78	Research and Development		5			5
LA00BE79	Anticipating Future Trends		5			5
<b>TEPUU19S-1002 Professional Core Competence</b>						<b>155</b>
<b>TEPUU19S-1003 Digitalisation</b>						<b>10</b>
TE00BH08	Digitalisation of the Future	3				3
TE00BH09	Networks, Data Security and Cloud Services	3				3
TE00BH10	Digital Tools	4				4
<b>TEPUU19S-1004 Mechanics</b>						<b>10</b>
TE00BH11	Mathematical tools	5				5
TE00BH12	Mechanical Applications	5				5
<b>TEPUU19S-1005 Electricity, Heat and Energy</b>						<b>15</b>
TE00BH13	Electricity		6			6
TE00BH14	Heat and Energy		6			6
TE00BH15	English for Engineers		3			3
<b>TEPUU19S-1006 Introduction to Design</b>						<b>15</b>
TE00BF38	Introduction to Materials	5				5
TE00BF40	Digital Design Tools	5				5
TE00BF41	Digital Modelling	5				5
<b>TEPUU19S-1007 Preliminary Studies in Wood Technology</b>						<b>15</b>
TE00BF45	Work Safety and Safe Use of Machines	5				5
TE00BF46	Wood as Raw Material	5				5
TE00BF47	Product Manufacturing Project	5				5
<b>TEPUU19S-1008 Furniture Industry</b>						<b>15</b>

TE00BF56	Furniture Industry		5			5
TE00BF57	Production and Process Planning		5			5
TE00BF58	Product Development Project		5			5
<b>TEPUU19S-1009 Sawmill and Joinery Industry</b>						<b>15</b>
TE00BH79	Sawmilling and Further Processing		10			10
TE00BH80	Joinery Technology		5			5
<b>TEPUU19S-1010 Wood-based Panels Industry</b>						<b>15</b>
TE00BF54	Wood-based Panels Technology			10		10
TE00BF55	Research and Development Project			5		5
<b>TEPUU19S-1011 Practical Training</b>						<b>30</b>
LA00BO03	Practical Training	2,5	2,5	2,5	2,5	10
LA00BO04	Practical Training 2	2,5	2,5	2,5	2,5	10
LA00BO05	Practical Training 3	2,5	2,5	2,5	2,5	10
<b>TEPUU19S-1012 Thesis</b>						<b>15</b>
LA00BN99	Thesis planning			2,5	2,5	5
LA00BO00	Thesis research and writing			2,5	2,5	5
LA00BO01	Thesis publication			2,5	2,5	5
<b>TEPUU19S-1013 COMPLEMENTARY COMPETENCE</b>						<b>60</b>

## **TEPUU19S-1000 CORE COMPETENCE: 180 ECTS**

### **TEPUU19S-1001 Common Core Competence: 25 ECTS**

#### **LA00BE73 English for Work: 3 ECTS**

##### **Learning outcomes**

The student is able to

- recognise the different sources and tools to help them improve their English skills
- gain confidence and manage in written and oral communication situations required in professional studies and in the work life
- describe their education and qualifications
- understand the terminology and concepts of their own field

#### **LA00BE74 Swedish language, Oral Communication: 1 ECTS**

##### **Learning outcomes**

The student is able to

- express and justify their opinions
- use the key terminology of their own field
- tell about their education, work experience and duties e.g. in job-seeking situations
- present a company of their own trade

## **LA00BE75 Swedish language, Written Communication: 2 ECTS**

### **Learning outcomes**

The student is able to

- use the key terminology of their own field
- tell about their education, work experience and duties e.g. in job-seeking situations
- write a job application
- obtain information related to their own field of studies in Swedish e.g. on the Internet
- use online dictionaries

## **LA00BE76 Professional communication: 4 ECTS**

### **Learning outcomes**

The student is able to

- plan and produce grammatically correct texts
- write an article or an essay that fulfils the criteria of a scientific text related to their own field of studies
- perform actively in professional group communication situations
- retrieve information from a variety of sources and evaluate it critically

## **LA00BE77 Developing professional competence 1: 2 ECTS**

### **Learning outcomes**

The student is able to

- plan their own learning and cooperate in situations related to their own field of studies
- recognize their own competence and the needs to develop them further and to plan their career path observing them
- act as a group member
- operate in the learning environments of Lahti UAS
- picture their own field of studies and its future skills
- give feedback on tuition and services and thus participate in the development of education

## **LA00BQ87 Developing professional competence 2: 2 ECTS**

### **Learning outcomes**

The student is able to

- utilize various learning opportunities in curriculum
- recognize and aim their own competences to be in level with the future career requirements
- create a study plan that supports the future career goal
- give feedback on tuition and services and thus participate in the development of education

## **LA00BQ88 Developing professional competence 3: 1 ECTS**

### **Learning outcomes**

The student is able to

- identify themselves as a learner and develop their own learning skills
- evaluate innovative or alternative future competences required in their own field
- recognize and aim their own competences to be in level with the future career requirements

- masters the professional concepts of their own field and is able to point out their competencies during job recruitment processes
- give feedback on tuition and services and thus participate in the development of education

### **LA00BE78 Research and Development: 5 ECTS**

#### **Learning outcomes**

The student is able to

- obtain, utilise and assess R&D-related information and their sources critically
- follow the rules of ethical principles applied in all research activities
- use the most typical research and development methods of their own field
- write a scientific report and is familiar with the requirements for language and style and how to document the sources

### **LA00BE79 Anticipating Future Trends: 5 ECTS**

#### **Learning outcomes**

The student is able to

- anticipate the changes in their own operational environment
- utilise the futures research materials produced by national and international societies in their own field of studies
- use the terminology and methods of futures research in the research and development of their own field

### **TEPUU19S-1002 Professional Core Competence: 155 ECTS**

### **TEPUU19S-1003 Digitalisation: 10 ECTS**

### **TE00BH08 Digitalisation of the Future: 3 ECTS**

#### **Learning outcomes**

The student is able to

- describe the significance of digitalisation in the work life and its changes
- utilise digital data storages and social media in professional contexts
- utilise the field's new technologies, such as IoT, big data, GIS, robotics and AI

### **TE00BH09 Networks, Data Security and Cloud Services: 3 ECTS**

#### **Learning outcomes**

The student is able to

- operate in digital environments in a responsible way, taking data security into account
- describe the basic structure and operation of the Internet
- describe the principles of IP addresses and sub-networking
- implement a secure data network (SOHO) and connect it to an operator network
- utilise cloud services in their own work

## **TE00BH10 Digital Tools: 4 ECTS**

### **Learning outcomes**

The student is able to

- make reports and analyses with the help of wordprocessing and spreadsheet calculation software
- make a presentation of a practical project where they utilise elements of digital media
- carry out electronic publishing

## **TEPUU19S-1004 Mechanics: 10 ECTS**

## **TE00BH11 Mathematical tools: 5 ECTS**

### **Learning outcomes**

The student

- has the basic mathematical skills needed in engineering
- is able to describe the mechanical phenomena behind the developments in technology
- can solve mechanical problems using mathematics

## **TE00BH12 Mechanical Applications: 5 ECTS**

### **Learning outcomes**

The student is able to

- apply mechanics in practice
- apply digitalisation in mechanical phenomena
- apply vector mathematics in mechanical phenomena

## **TEPUU19S-1005 Electricity, Heat and Energy: 15 ECTS**

## **TE00BH13 Electricity: 6 ECTS**

### **Learning outcomes**

The student is able to

- describe the electrical phenomena behind developments in technology
- solve electricity-related problems using mathematics
- apply electrical phenomena in practice
- apply digitalisation in electricity-related phenomena

## **TE00BH14 Heat and Energy: 6 ECTS**

### **Learning outcomes**

The student is able to

- describe the significance of heat behind the development of technology
- solve heat- and energy-related problems using mathematics
- apply heat phenomena in practice

## **TE00BH15 English for Engineers: 3 ECTS**

**Learning outcomes**

The students is able to

- use the terminology of their field and understand professional texts
- discuss topics related with their field
- communicate in job application situations
- present their own project orally and in writing
- write a professional report and a thesis abstract

**TEPUU19S-1006 Introduction to Design: 15 ECTS****TE00BF38 Introduction to Materials: 5 ECTS****Learning outcomes**

The student

- knows different materials and their mechanical properties
- is able to describe the chemical structures and properties of materials
- is able to define end uses for different materials
- is able to select materials for different applications

**TE00BF40 Digital Design Tools: 5 ECTS****Learning outcomes**

The student

- knows the basics of technical drawing
- knows the basics of CAD and is able to read, edit and produce technical drawings
- knows the basics of 3D modelling
- is able to make technical drawings in a 3D environment and to visualise assembly drawings

**TE00BF41 Digital Modelling: 5 ECTS****Learning outcomes**

The student

- knows the central concepts and features of CNC technology
- knows the central concepts of CAD/CAM software
- is able to plan CNC machining tool paths using CAM software
- is able to make a 3D model of a design and to print a scale model using a 3D printer

**TEPUU19S-1007 Preliminary Studies in Wood Technology: 15 ECTS****TE00BF45 Work Safety and Safe Use of Machines: 5 ECTS****Learning outcomes**

The student

- is able to describe regulations in work safety legislation on the safety and health of the work environment
- knows how to find and use notices concerning safe use of harmful and dangerous substances

- knows how to use the machines in the workshop according to safety regulations
- is able to use a CNC router in a correct and safe way

### **TE00BF46 Wood as Raw Material: 5 ECTS**

#### **Learning outcomes**

The student

- can describe the properties and special features of wood
- is able to assess the use of wood as a renewable natural resource
- is able to assess the use of wood for energy and the ecological impact of the use of wood
- knows how to take the special features of wood into account when designing products

### **TE00BF47 Product Manufacturing Project: 5 ECTS**

#### **Learning outcomes**

The student

- is able to use measuring devices
- is able to work in a design team
- knows how to use the basic machinery of the woodworking industry and is able to work with them
- is able to make wooden products according to technical drawings

### **TEPUU19S-1008 Furniture Industry: 15 ECTS**

### **TE00BF56 Furniture Industry: 5 ECTS**

#### **Learning outcomes**

The student

- can describe the environment where the furniture industry operates and analyse the practices of companies
- can describe the products of the furniture industry and the techniques used to produce them
- can compare the glues used in the furniture industry based on their properties
- is able to name surface treatment substances used in the furniture industry, as well as methods used to apply them

### **TE00BF57 Production and Process Planning: 5 ECTS**

#### **Learning outcomes**

The student

- is able to discuss product qualities with machine and tool suppliers
- is able to select suitable machining techniques for different stages of product manufacture
- can calculate production costs and compare different investment calculation methods
- is able to make layout plans and utilise CAD software when making them

### **TE00BF58 Product Development Project: 5 ECTS**

#### **Learning outcomes**

The student

- is able to utilise the product development process in their own design work
- is able to use technical drawing tools in design
- knows how to integrate technical aspects to design
- is able to contribute their knowledge and skills to the work of a design team

## **TEPUU19S-1009 Sawmill and Joinery Industry: 15 ECTS**

## **TE00BH79 Sawmilling and Further Processing: 10 ECTS**

### **Learning outcomes**

The student knows

- the manufacturing processes of different sawmills
- the drying techniques of sawn timber
- the grades of sawn timber and their end uses
- the further processing methods for sawn timber

## **TE00BH80 Joinery Technology: 5 ECTS**

### **Learning outcomes**

The student

- can describe the products, production techniques and applications of the joinery industry
- is able to select the right raw material and machining technique for joinery products
- is able to choose a suitable glue for different uses and analyse the properties of glues
- can take into account construction regulations and guidelines connected with the use of joinery products

## **TEPUU19S-1010 Wood-based Panels Industry: 15 ECTS**

## **TE00BF54 Wood-based Panels Technology: 10 ECTS**

### **Learning outcomes**

The student is able to:

- describe the manufacturing processes of different board products
- knows the main end uses of each board type
- define the technical properties of different board types
- knows the further processing possibilities of different board types

## **TE00BF55 Research and Development Project: 5 ECTS**

### **Learning outcomes**

The student is able to:

- make a project plan
- search for literature to support the project
- perceive the goals of a research and development project
- report on the project results and analyse them



## **TEPUU19S-1011 Practical Training: 30 ECTS**

### **LA00BO03 Practical Training: 10 ECTS**

#### **Learning outcomes**

The student is able to

- describe work-related phenomena and use related concepts
- act in a productive way, following the practices of the workplace and the ethical principles of the profession
- use the techniques, work methods, models and processes that they have learnt
- act in a customer-oriented way in interactive situations in the workplace and in the cooperation network
- evaluate and develop their own competence in the work done in practical training

### **LA00BO04 Practical Training 2: 10 ECTS**

#### **Learning outcomes**

The student is able to

- describe work-related phenomena and use related concepts
- act in a productive way, following the practices of the workplace and the ethical principles of the profession
- use the techniques, work methods, models and processes that they have learnt
- act in a customer-oriented way in interactive situations in the workplace and in the cooperation network
- evaluate and develop their own competence in the work done in practical training

### **LA00BO05 Practical Training 3: 10 ECTS**

#### **Learning outcomes**

The student is able to

- describe work-related phenomena and use related concepts
- act in a productive way, following the practices of the workplace and the ethical principles of the profession
- use the techniques, work methods, models and processes that they have learnt
- act in a customer-oriented way in interactive situations in the workplace and in the cooperation network
- evaluate and develop their own competence in the work done in practical training

## **TEPUU19S-1012 Thesis: 15 ECTS**

### **LA00BN99 Thesis planning: 5 ECTS**

#### **Learning outcomes**

The student is able to

- apply the acquired theoretical knowledge to the problems and phenomena of the working life
- solve problems, organise and perceive wholes
- work interactively, tenaciously and systematically

- work according to the practices of their own line of trade
- gather information and evaluate sources critically - report their work orally, in writing and visually

### **LA00BO00 Thesis research and writing: 5 ECTS**

#### **Learning outcomes**

The student is able to

- apply the acquired theoretical knowledge to the problems and phenomena of the working life
- solve problems, organise and perceive wholes
- work interactively, tenaciously and systematically
- work according to the practices of their own line of trade
- gather information and evaluate sources critically - report their work orally, in writing and visually

### **LA00BO01 Thesis publication: 5 ECTS**

#### **Learning outcomes**

The student is able to

- apply the acquired theoretical knowledge to the problems and phenomena of the working life
- solve problems, organise and perceive wholes
- work interactively, tenaciously and systematically
- work according to the practices of their own line of trade
- gather information and evaluate sources critically - report their work orally, in writing and visually

### **TEPUU19S-1013 COMPLEMENTARY COMPETENCE: 60 ECTS**

#### **Courses included in the study module**

You can find Complementary Competence courses in a separate curriculum called "Complementary Competence Courses Taught in English, Bachelor's Degree, 17S-".

In addition, you can choose Professional Core Competence courses of other Bachelor's Degree Programmes as your Complementary Competence Courses.