Basic data of the subject	
Academic Unit:	**Faculty of Architecture, Design and Wood Technology**
Program:	**Interior Architecture and Furniture Design**
Subject title:	**Technology and Digitalization of Production**
Study level:	**Bachelor**
Subject status:	**Mandatory**
Year of study:	**II**
Number of hours per week:	**3**
Value of credits – ECTS:	**5**
Lecturer of the subject:	
Contact details:	
Subject description:	Knowledge of the basics of cutting and mechanical processing theory. Conventional technological machines for sawing, boring, drilling, milling, sanding, bending, pressing, etc. Technological card and technological flow in the furniture production department. Production systems, communication systems and standards for Industry 4.0. CNC machines and their application in the production of furniture and interior elements. Distribution and standardization of work in production departments.
Purpose of subject:	Equipping students with basic knowledge of wood processing machines, their arrangement according to technological flow, standardization and division of labor. Preparing students for the digitalization of industrial production and production line systems with modern machinery that serve for production in the wood industry.
Expected learning outcomes:	After completion of this module, students will be able to: • *Know the basics of wood cutting theory, cutting force and power, specific work.* • *Know about conventional machines for mechanical processing.* • *The arrangement of machines in the technological line and the standardization of work.* • *Know and understand the chain of technological lines in the industry;* • *Know and understand the SMART industry;*

	• *Plan and implement timely targeted technical projects on CNC machines;* • *Ability to design and use leading CNC machines in the interior furniture production department.*

Contribution to student workload (which should correspond to the students learning outcomes)			
Activity	**Hours**	**Days/week**	**Total**
Lectures	2	13	26
Theoretical / laboratory exercises	1	13	13
Practical work	3	2	6
Contacts to the Lecturer / Consultations	1	7	7
Field exercises	3	2	6
Tests, student seminars	1	2	2
Home work	1	10	10
Time of self-study (in the library or home)	3	9	27
Final preparation for the exam	2	13	26
Time spent in assessment (tests, quiz, final exam)	2	1	2
Projects, presentations, etc.	-	-	
Total			**125**

Teaching methodology:	*Lectures, team work, lab work, practical visit*
Assessment methods:	*Final Exam 60%* *Seminars 40%*
Literature	
Basic literature:	1. Osman O. ''Makinat dhe Instrumentat Prerëse'' Prishtinë 2. Marku P., Dimoshi S. ''Teknologjia e Përpunimit Mekanik të Drurit'' Tiranë 2004 3. Shaping the Fourth Industrial Revolution by Klaus Schwab Satya Nadella Nicholas Davis 4. Steve K.& Arthur G. Computer Numerical Control CNC
Additional literature	5. Elena G. Popkova, Yulia V. Ragulina, Aleksei V. Bogoviz (2019), Industry 4.0: Industrial Revolution othe 21st Century.

Designed plan of teaching:	
Weeks	**Lecture to be held**
Week 1:	Introduction to the subject. Basics of wood cutting theory
Week 2:	Woodworking tools. Cutting force and power
Week 3:	Wood sawing and carving machines
Week 4:	Milling and drilling machines
Week 5:	Lathes, grinding machines, presses, etc.
Week 6:	Mechanical processing technological charts and production technological flow
Week 7:	Theoretical foundations of mechanical wood processing technology
Week 8:	Key aspects of production digitalization
Week 9:	Intelligent systems and technologies for enabling digitalized industry
Week 10:	Organization of technological production lines - Practical work in the UASF laboratory
Week 11:	Application of software programs on CNC machines
Week 12:	Identification of machines based on manipulation of banks and axes (axis X,Y,Z)
Week 13:	CNC machine software (G-Codes, Drivers, etc.)
Week 14:	Bazat e programimit dhe aplikimi i programeve në CAD/CAM
Week 15:	Presentation of seminars by students

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