

Units of learning outcomes: Wrench

Name of unit	Producing a wrench
Name of qualification / of the branch to which the unit relates	Fields of education: Mechanical engineering Professional qualification: CNC operator
The level of qualification according to the EQF	4
Length (hours)	40
Expected learning outcomes (knowledge, skills, independence and responsibility)	Graduated: a) Reads a technical drawing and technical documentation and gains technical and spatial imagination and perception b) Understands the raw measures c) Knows and applies the rules of the profession and production technology d) Plans the model and draws it in CAD Fusion 360 e) Knows the technological possibilities of CNC machine: types, purposes and features of individual tools f) Selects the CNC machine and material: knows the properties and choose the proper material for production g) Independently uses the functionalities of the programming software h) Programs the lathe and milling machine in Mach3 (Fusion 360 simulation) i) Determines the optimal processing operations and economical material



	<p>management</p> <ul style="list-style-type: none">j) Uses and sets the control unit: G-function, M function, coordinate system, machine reference points and toolsk) Sets the CNC machine: clamping, tool and zero point settingsl) Identifies the limiting factors that may occur during production processm) Prepares the starting material (custom sawing to initial size)n) Transfers the program (G-code) to the machine control unito) Uses the measuring tools and checking toolsp) Produces the workpieces according to drawings and programsq) Controls the quality, measures the workpiece and determines whether it meets the tolerances and quality of processingr) Observes the principles of occupational safety, health protection and fire protection at works) Takes care of the quality of his/her workt) Handles material economicallyu) Communicates with co-workers in the language of the countryv) Cooperates in the production of orders with othersw) Acts in accordance with environmental protection requirements
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Evaluation form (Personal Transcript)

Name of unit	Producing a wrench			
Name				
Final competences	Performed under supervision	Performed separately	Pass (date and signature)	Fall (date and signature)
Reads a technical drawing and technical documentation and gains technical and spatial imagination and perception				
Understands the raw measures				
Knows and applies the rules of the profession and production technology				
Plans the model and draws it in CAD Fusion 360				
Knows the technological possibilities of CNC machine: types, purposes and features of individual tools				
Selects the CNC machine and material: knows the properties and choose the proper material for production				
Independently uses the functionalities of the programming software				
Programs the lathe and milling machine in Mach3 (Fusion 360 simulation)				
Determines the optimal processing operations and economical material management				
Uses and sets the control unit: G-function, M function,				



coordinate system, machine reference points and tools				
Sets the CNC machine: clamping, tool and zero point settings				
Identifies the limiting factors that may occur during production process				
Prepares the starting material (custom sawing to initial size)				
Transfers the program (G-code) to the machine control unit				
Uses the measuring tools and checking tools				
Produces the workpieces according to drawings and programs				
Controls the quality, measures the workpiece and determines whether it meets the tolerances and quality of processing				
Observes the principles of occupational safety, health protection and fire protection at work				
Takes care of the quality of his/her work				
Handles material economically				
Communicates with co-workers in the language of the country				
Cooperates in the production of orders with others				
Acts in accordance with environmental protection requirements				



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Name and signature of the representative of the receiving organization responsible for the evaluation:

Signature of the pupil:

Date and stamp of the receiving organization: