Course: Manufacturing Technology — credits: 5

Course code	WBVP23MT
Name	Manufacturing Technology
Study year	2026-2027
ECTS credits	5
Language	English
Coordinator	A. Prins
Modes of delivery	Education
Assessments	Manufacturing technology - Assignment

Learning outcomes

Student is able to:

- describe the machining operations of turning, milling, drilling, and threading, along with the corresponding tools
- select, based on given technical drawings, material, type of cutting material, and type of operations, the following data from tables: feed rate, cutting speed, specific cutting force, and tool life for turning and threading operations
- select, based on given technical drawings, material, type of cutting material, and type of operations, the following data from tables: feed rate, cutting speed, and tool life for milling operations
- calculate parameters such as cutting depth, speed, operations time, main cutting force, and net required power for turning operations using the provided data
- calculate parameters such as cutting depth, speed, and operations time for milling operations using the provided data
- describe the processes of joining and forming, with a particular focus on welding, bolting, bonding, soldering and casting, including their specific characteristics.
- calculate the unfolded length, minimum bend radius, maximum bend radius, free bending force, die bending force, and punch-through force of bending operations such as air bending, swivel bending, and die bending based on technical drawings
- calculate punch force, edge and center distances, strip width, and punch hole dimensional accuracy for punching operations based on technical drawings
- calculate parameters like blank diameter, draw ratio, number of draws, draw force, and die holder pressure for deep drawing operations based on technical drawings

Content

In this course, students will acquire valuable insights into product manufacturing by exploring a diverse range of machining processes, techniques, and machinery. They will develop the capacity to analyse and compute crucial parameters for operations like turning, milling, drilling, and threading, while also comprehending the broader implications of operation durations and costs. Furthermore, students will delve into the realm of product fabrication through non-machining avenues, encompassing techniques, machinery, and welding methods. They will master the ability to ascertain and calculate vital parameters for various operations and techniques, thereby cultivating a holistic comprehension of operation durations and associated costs.

Included in programme(s)

Mechanical Engineering VWO a 3-year variant

School(s)

Engineering, Life Sciences & ICT

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