Production technology 1 (ECTS credits: 6)

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**Course description:**

The students will learn the basics of the cutting theory. They will learn about the cutting tools, the tool materials, the tool geometry, the tool wearing, the coolants, about turning, scraping, milling, drilling, reaming, grinding. They will practice the defining of the cutting parameters for different operations.

1. The main and the auxiliary motions, the planes and angles that define the tool geometry
2. Chip forming, defining the cutting force and power
3. Thermal and wear processes during cutting, coolant
4. The surface roughness
5. Tool materials
6. Turning
7. Defining cutting parameters at turning
8. Scraping
9. Drilling, boring and reaming, defining cutting parameters
10. Milling
11. Defining cutting parameters at milling
12. Grinding
13. Defining cutting parameters at grinding
14. Production of gears
15. Optimization of the cutting parameters

**Aims:**

#### Students should learn the basics of the cutting theory.

#### The students should see and understand the different cutting technologies like turning, milling, drilling, reaming, grinding.

#### Students should learn the structure and the work of the different machine tools.

**Learning outcomes:**

The students should get basic knowledge needed for cutting operation planning, and should be able to define the cutting parameters for a given cutting operation.