**CAD-CAM (ECTS credits: 6)**

Language: the course is offered in English, Serbian and Hungarian.

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**Course description:**

The students will learn different methods of Computer Aided Planning, Computer Aided Production Planning, and through some examples practice the computer aided element verification with finite element methods and computer aided tool path generation with a CAM module.

1. Benefits of using computer for planning
2. Different methods of generating surfaces and bodies
3. Reverse engineering
4. Generative design
5. Visualization
6. Theory of the Finite Element Analysis
7. Typical elements used during finite element analysis
8. Stress and strain analysis
9. Thermal and flow analysis
10. Buckling and modal analysis
11. CAM coordinate systems
12. Selection of the machine tool and tool definition
13. Tool path generating methods
14. Post processing
15. Revision of the curriculum

**Aims:**

#### Students should learn the theoretical background and the usage of software for product design, product verification and manufacturing planning.

#### Students should see how these software can speed up and make the planning processes more efficient.

**Learning outcomes:**

The students should get basic skills of the usage of different software aimed to speed up and make the design and the verification of a product, and the planning of the different production processes more efficient. Moreover, students should be able to solve concrete planning tasks.