**Diploma work (ECTS credits: 12)**

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

**Task and aim:**

The student work on a predefined technical topic relevant to the student’s field of engineering. Their work and progress is closely followed by a supervisor (‘mentor’). The student regularly presents reports to the supervisor on the work, research and general progress of the final work. The process of creating the diploma work is actively discussed with the supervisor, who offers feedback, theoretical background, suggestions on directions for advancement. The student is ensure access to the necessary laboratory equipment so as to perform all the required practical work in the form of measuring, designing, projecting, and testing, based on a thorough study of the relevant theoretical background.

**Kinematics**

Language: the course is offered in Serbian and Hungarian.

***Goals:***

The aim of this course is to teach students the fundamental principles of Kinematics, in order to help students to master the determination of motion along with the properties of motion of mechanical objects, and to teach the ways to determine the causes of the motions, moreover, this course helps students to solve problems in different engineering and scientific fields.

***Theoretical teaching includes the following topics:***

Determination of Motion of a Particle – Vector and Natural; Particle Velocity; Determination of Particle Velocity in Various Types of Coordinate Systems; Particle Acceleration; Determination of Particle Acceleration; Basic Terms of Kinematics of a Rigid Body; Translation; Rotation of a Rigid Body about a Fixed Axis; Angular Velocity and Angular Acceleration of a Rigid Body; Planar Kinematics of a Rigid Body; Spherical Kinematics of a Rigid Body; Relative Motion of a Particle; Velocity and Acceleration of a particle in Relative Motion.