

Tárgytematika / Course Description**Thermofluids 2.****AJNB_JFTA019****Tárgyfelelős neve /****Teacher's name:** dr. Feszty Dániel**Félév / Semester:** 2022/23/1**Beszámolási forma /****Assesment:** Folyamatos számonkérés**Tárgy heti óraszám /****Teaching hours(week):** 1/2/0**Tárgy féléves óraszám /****Teaching hours(sem.):** 0/0/0**OKTATÁS CÉLJA / AIM OF THE COURSE**

The aim of the subject/course is to provide introduction into the basics of Fluid- and Thermodynamics. After completing the course, students will be able to determine the properties of moving fluids as well as the aerodynamic forces acting on objects.

TANTÁRGY TARTALMA / DESCRIPTION

Within the subject there will be project tasks to be completed by the students. In order to be able to complete these projects the students will be provided the required theoretical knowledge through modules so called Atoms. These are the following:

Atomok:

- Fluid Kinematics
- Bernoulli equations
- Fluid dynamics
- Control Volume Theorem
- Conservation of Mass
- Conservation of Momentum
- Aerodynamic forces

Projektek:

- Nyomás alapú légsebesség mérő tervezése és gyártása
- Légellenállás Audi szélcsatornában (személyek, testek stb.)
- Szélirány hatása mozgó testre (pl. biciklis) - alaktényező irányfüggése stb.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Evaluation will take place as follows: written or oral assessment of atoms (50%) AND class and project participation (50%).

Written or oral assessment of atoms (50%): will evaluate students' knowledge related to the course material. The assessment takes place throughout the semester.

Class and project participation (50%):

- Class participation (20%) will be evaluated based on presence and the quality of questions and comments during class time. Throughout the semester at least three (3) substantive questions are expected from each student during class or consultation time
- Successful completion of project work related to the course throughout the semester (30%)

Assessment is performed on a scale of five grades. Grades will be determined as follows:

0-51% fail,
52-61% passable,
62-71% satisfactory,
72-81% good,
82-100% excellent.

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Hibbeler, R. (2017). Fluid Mechanics, 2nd Edition Pearson Publishing.

White, F. (2016). Fluid Mechanics, 8th Edition, McGrawHill.

Cengel, Y., Cimbala, J.M. (2017). Fluid Mechanics: Fundamentals and Applications. 4th Edition, McGrawHill.

Cengel, Y., Boles, M., Kanoglu, M. (2019). Thermodynamics: An Engineering Approach., 9th Edition, McGrawHill

Moran, M., et al.. (2014). Fundamentals of Engineering Thermodynamics, 8th Edition, Wiley