**INTERNSHIP POSITION**

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| **Topic**  | Transient numerical simulations in fluid mechanics and heat transfer |
| **Specification/****Programme**(min. 100 words) | Computational fluid dynamics (CFD) is being used for problems of fluid mechanics and heat transfer more and more these days. The main objectives of this project is familiarization with the basic transient problems in fluid mechanics and heat transfer. A special emphasis should be put on a thorough comprehension of transient (unsteady) numerical simulations. There is still a lack of learning resources related to CFD at the university, so the student will prepare the necessary materials for the selected problems. The student should create geometries, generate meshes and perform calculations of 2–3 selected basic problems. Comparisons with an analytical approach or experiments would be beneficial but not obligatory. Numerical simulations can be done either in a commercial (Ansys Fluent or CFX) or non-commercial (OpenFOAM) software. Furthermore, if possible, the simplest problems will be simulated by using software such as Matlab or MS Excel. The objective of this project is to create study materials which help international students at TUL with a deeper understanding of investigated transient problems. |
| **Time period** | Apr. 2023 to May 2023 or Sep. 2023 to Oct. 2023 |
| **Length of the traineeship - number of months** | 1 - 2 months |
| **Supervisor´s name and contact**  | Jan Kracik Technical University of LiberecFaculty of Mechanical EngineeringDepartment of Power Engineering EquipmentStudentská 1402/246117 Liberecjan.kracik@tul.cz |
| **Administrative Contact** | Marcela Valkova, marcela.valkova@tul.cz  |
| **Documents required** | CV, Letter of motivation, Transcript of Records |