Software Lab

Main Objective:

CFD plays a significant role in optimizing airfoil designs by accurately forecasting airflow features and lift and drag forces. The adoption of Gurney flaps has become notable for improving aerodynamic efficiency through skillful management of airflow separation and drag reduction.

Tasks	Estimated duration
Familiarization and Execution of Tutorials (https://www.openfoam.com/documentation/guides/latest/doc/verification-validation-naca0012-airfoil-2d.html)	2 Week
Familiarization and Configuration of Sampling Post-process in OpenFOAM (residuals, pressure distribution, forces, velocity field)	
Developing 2D geometry and mesh for airfoil with and without gurney flap	2 Week
Running the Case with simpleFoam and Reporting Results	3 Week
Running the Case with pimpleFoam and Reporting Results	3 Week
Preparing Materials (Contours, Diagrams, Graphs, Tables) and Writing Final Report	4 Weeks
Summation:	14 Weeks

Meeting Schedule:
Weekly Meeting with Mehrdad Kazemi:
Day: Every Wednesday, Time: 16:00, Location: Room 104
Progress Report Meetings with Prof. Kornev:
Frequency: Twice every month, Starting: 06/2024

Contact information:

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