



Program and Degree: BSc in Aerospace Engineering	
Course Description	
Course Title	Experimental Methods in Aerodynamics
Prerequisites	Aerodynamic II
The course aims	Students' acquaintance with experimental aerodynamics such as wind tunnels, experiment setup and measurement devices
Contents	<ul style="list-style-type: none"> - An introduction to Experimental Aerodynamics and limitations of theoretical methods. - Wind Tunnels and their types: Low speed wind tunnel and descriptions of its different parts, transonic, supersonic and hypersonic wind tunnels. - Interference effects in wind tunnels: wall effect, holders and fixtures effect, model obstruction effect, methods of experiment error compensation, effect of turbulence of airflow. - Measurement: pressure sensors, force and moment measurement (balancing), Flowmeters and speed sensors, thermometers, Shear stress and heat transfer. - Air flow visualization methods: smoke, Tufts, powders, liquid films and photography.
Duration	1 Semester (16 weeks)
Course Hours	3 hours/week
Course Type	Optional