	T.R. **İZMİR KÂTİP ÇELEBİ UNIVERSITY** **FACULTY OF ENGINEERING AND ARCHITECTURE** **MECHANICAL ENGINEERING DEPARTMENT**	**Form No:** FRM-1 **First Pub Date:** 15.11.2016 **Revision Date:** 15.02.2017

DESIGN PROJECT PROPOSAL FORM

Academic Year	**2022 -2023**	**Semester**	Fall • Spring ■
Project Type	**Research** • ME 411 Thermal & Fluid Design • ME 413 Mechanical Design • ME 415 Robotics & Control Design	**Application** ■ ME 412 Thermal & Fluid Design • ME 414 Mechanical Design • ME 416 Robotics & Control Design	
Advisor	Assoc.Prof.Dr.Sercan ACARER		

Project Title	Development of a Small-Scale Wind Turbine
Purpose and Scope	The project deals with design, high fidelity analyses, performance enhancement with passive flow control devices, manufacturing and testing of a small-scale wind turbine at a diameter of 60cm. The aim is to generate at least 50W power at 10m/s wind speed.
Work Packages	• Preliminary design of the turbine • Design optimization to obtain optimal design parameters • Work on passive flow control devices at low Reynolds number environment and making Computational Fluid Dynamics (CFD) simulations to select a viable configuration • Test of passive control devices at airfoil level at İKCU Wind Tunnel • Mechanical design of the turbine • Manufacturing and assembly of the turbine • Experimental evaluation of the turbine. The following specifications will apply: https://teknoparkizmir.com.tr/tr/bilgi/best-for-wind-ruzgar-turbini-tasarim-ve-uretimi-yarismasi-sartnamesi/ Within the following scope: https://teknoparkizmir.com.tr/tr/haberler/etkinlikler/best-for-wind-ruzgar-turbini-tasarim-ve-uretimi-yarismasi/
# of Team Members	4 students per team
This section to be filled by the Commission	The Project Proposal ☐ is approved. ☐ should be revised considering the following suggestions: