



Abu Dhabi Polytechnic

Students' Graduation Project Abstract

Department:	Aircraft Maintenance Technology	Semester:	Spring-2022
Project Title:	Design and Fabrication of Retractable Landing Gear		
Supervisor:	Dr. Sheharyar Malik		

Abstract:

The landing gear system is one of the primary structures in the aircraft. It is a critical system that not only guides the maneuvers on runway but it also provides cushion to the aircraft structure by absorbing shock loads. It is designed as such to absorb and distribute the kinetic energy of landing impacts, thus decreasing the impact stresses on the aircraft. The design of the landing gear and its supporting mechanism have been continuously improved and it catches the eye of the researchers.

This report is prepared to provide the activities that were carried out during the designing and manufacturing of a landing gear system for an Unmanned Air Vehicle (UAV). The landing gear is tricycle type configuration i.e. a nose landing gear and two main landing gear are placed near the center of gravity of the aircraft. The landing gear system will be retractable and will electrically operate in contrast to the usual hydraulic operated systems. Each landing gear will be connected to retracts mechanism. The landing gear mechanism will allow the extension/retraction to be in the longitudinal axis of the UAV. The interface is controlled by the microcontroller, which is specifically programmed for this project. The struts are made from carbon fiber which also adds novelty to the project. The landing gear doors will be of sliding type as compared to the conventional folding doors for the landing gears.

First, the report will provide the introduction of the landing gear system. Second, the hardware and material that is used to manufacture the system. Third, the system design. Fourth, the manufacturing process of the landing gear model. Fifth, the conclusion. Finally, the references of the report and landing gear model.