

King Fahd University of Petroleum & Minerals
Electrical Engineering Department

EE-306 Electromechanical Devices

DESIGN PROJECT

Second Semester 2013-2014 (132)

By: Dr. Chokri Belhadj Ahmed

Due on Monday 12th May 2014 during the class time

It is required to design the DC motor to run a small size electric vehicle to be used inside an airport building to help the transportation of old people. The vehicle is supposed to carry a maximum of 4 persons at the highest speed of 60 Km/hour. The engine is driven by a 200 V battery capable to energize the motor for 120 Km before being recharged. The efficiency of the motor must be between 85 to 90 percent. The motor shaft diameter is expected to be within (0.2 to 0.4 m). Give the size of the battery required in AH (Ampere Hour). Choose and estimate all the design characteristics of the motor, finally display all the power flow diagram results including efficiency and speed regulation of the motor. Give all assumptions taken.