EE 3001 - Junior Design Studio (EV)
Project Deliverable 1

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Bike Variables:
- *$Capacity_{Cell}$:* 17.82 Ah
- *$Weight_{Cell}$:* 0.63 kg
- *V_{nom} :* 3.2 V
- *# of $Parallel_{Cell}$:* 1
- *# of $Series_{Cell}$:* 20
- *$Weight_{Pack} = Weight_{Module}$:* 15.42 kg
- *Pack SOC_{Max} :* 80% (Assumed)
- *Pack SOC_{Min} :* 20% (Assumed)
- *$Efficiency_{Pack}$:* 90% (Assumed. Will calculate through the discharge cycle later)
- *$Torque_{Motor}$:* Can not be measured directly
- *$Inertia_{Motor}$:* Can not be measured or calculated directly
- *$Radius_{Wheel}$:* 0.28 m
- *$Inertia_{Wheel}$:* 0.392 kgm² (wheel radius × wheel radius ²)
- *Roll $Coefficient_{Wheel}$:* Can not be measured or computed (Depends on road conditions)
- *$Efficiency_{Inverter}$:* $\frac{P_{out}}{P_{in}} = \frac{548.7\,W}{573.5\,W} = 0.9566$

    Note: *Getting unequal P_{out} across the 3 phases of the inverter. Manufacturing error.*
- *Fractional Regen Torque:* 0.93 (Taken from the variable file from Lab 2 Homework Assignment)
- *$Ratio_{Gear}$:* 1.0 (Assumed, since can not be determined)
- *$Inertia_{Gear}$:* 0.01 kgm² (Taken from the variable file from Lab 2 Homework Assignment)
- *$Efficiency_{Gear}$:* 0.98 (Taken from the variable file from Lab 2 Homework Assignment)
- *# of Wheels :* 2
- *$Force_{Road}$:* 0 N (Assumed)
- *Drag Coefficient :* 0.88 (Taken from the variable file from Lab 2 Homework Assignment)
- *Frontal Area :* 1.292 m² (Measured used built-in iPhone Measure App)
- *$Weight_{Vehicle}$:* 77 kg
- *Payload :* 75 kg
- *$Power_{Overhead}$:* 56.151 W