# Student name: …

# Background

Use Matlab and Simulink to solve tasks below.

Use the example scripts in “Assign2.zip” uploaded at Canvas.

The main Simulink model is “EDR100\_Model1.slx”.

DO NOT forget to give the unit, the legend, or the axel labels.

# Tasks

1. Present three different drive cycles (one being WLTC) and calculate, plot for each drive cycle. You may use the supplied m-file “Drive\_cycle\_example” or the Simulink model to solve this task.

* Speed vs time in km/h
* Acceleration vs time in m/s^2
* Traction power in W   
  (9 points)

1. Sensitivity Analysis for Total Traction Power. Under the condition with 0 acceleration and 0 slope, plot the total traction power (P\_t or P\_wheel) for speeds from 0…180 km/h with steps of 10 km/h. You may use the supplied m-file “solutions\_Assignm1.m” or the Simulink model to solve this task.   
   Hand in:

* Plot with P\_tot vs speed with proper labels on all axes (quantity and unit)
* Table with all 19 values in plot (0 decimals)  
  (5 points)

1. Implement slope function in the Simulink model. Run model with WLTC and slope of ±0.07 rad (two simulations). Plot drive cycle with axis labels and units:

* Speed vs time in km/h
* Acceleration vs time in m/s^2
* Traction power in W
* Provide comment of Traction power compared to assignment A with WLTC, what is different and why?  
  (8 points)