**CE 45000: Transport Policy and Planning**

**Homework 4**

**Due: Monday, October 23, 2018**

**Problem 1.** Using dataset 1 and the following equations, calculate existing and next year PSIs for all segments.

$$PSI=5.35e^{-0.0058\*IRI} -4RUT^{2}-3\left(1-\left(\frac{PCI}{100}\right)\right)$$

**Problem 2.** Using dataset 2, develop pavement deterioration models for three types of roads with different functional classification? Identity the one with lowest traffic volume?

**Problem 3.** Using dataset 3, develop a pavement deterioration model. Provide results from statistical diagnostics?

**Problem 4.** Using dataset 4, develop a pavement deterioration model considering deterministic and Markov process techniques both?

**Problem 5.** Using dataset 5, develop a pavement performance model considering PSI as the dependent; and RUT, IRI, PCI as the independent variables? Provide statistical diagnostics including co-relation matrix?