UNIVERSITY OF WATERLOO
FACULTY OF ENGINEERING
Department of Management Sciences

Vanderbilt University Medical Center (VUMC)

Due June 4th, 2019

1. Discuss the uncertainties that would affect the daily surgical volume. How does assessing daily case volume prior to surgery date could help VUMC to reduce OR expenses?

2. After pre-processing the data, conduct an exploratory descriptive analysis to understand which elements affect the daily case volume. Does time (Year/month/week/. etc.) or day of the week have a significant impact on the surgical volume?

3. Which booking date (expressed in terms of number of days before surgery, i.e., T-x) is most useful in predicting the case volume? Is it useful to include multiple booking dates in your prediction model?

4. Develop a model to predict the daily number of surgeries.