Appendix: Topics in the ISyE 7XXX "Informatics in Production & Service Systems"

- Basics of variability modeling, analysis and control
- Data dimension reduction, feature extractions, and feature-preserving data compression
- Data-driven knowledge discovery for complex systems modeling
- Engineering-driven modeling for multistage systems
- Data mining assistant system design and optimization
- Diagnosis of variability root causes through estimation and pattern recognition
- Diagnosibility analysis
- Optimal distributed sensing, sensor placement, and evaluations
- Predictive cautious control considering system (data, model, and actuation) uncertainties
- Applications (QC, manufacturing systems, healthcare, service industry)