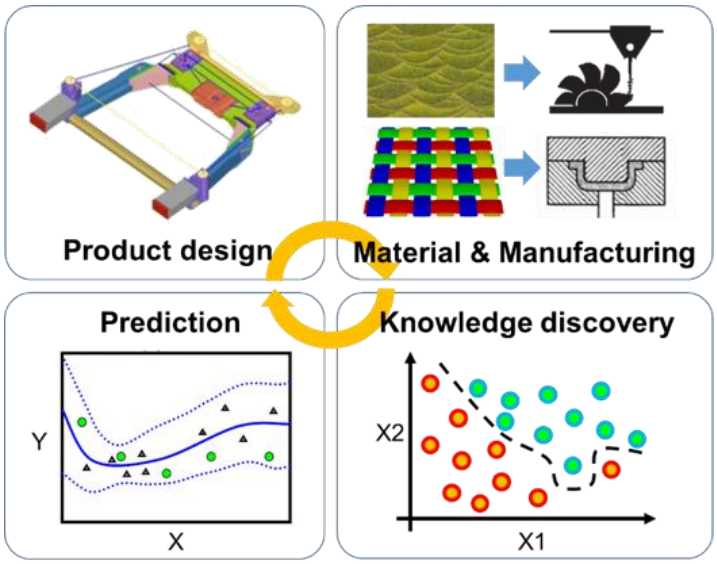
UCONN
SCHOOL OF ENGINEERING

United Technologies Corporation
Institute for Advanced Systems Engineering
UNIVERSITY OF CONNECTICUT

Graduate Courses in Systems Engineering

SE 5702 Data Science for Materials and Manufacturing

What's Exciting About this Course? The students will learn data analytics methods for knowledge discovery and product design optimization. The students will also apply data mining and machine learning techniques to tackle the challenges in manufacturing and computational materials engineering.



Course Outcomes

- Exhibit proficiency in data analytics methods and software application
- Select proper data mining and machine learning methods for manufacturing-relevant problems
- Work in teams and communicate results effectively

Topics: Introduction to manufacturing processes, Principles of Design for Manufacturing (DFM), Design of Experiment (DOE) and data collection, Data visualization, Optimization and regression, Supervised learning methods, Unsupervised learning methods, Ensemble modeling, Applications of data analytics in manufacturing, Application of data analytics in computational materials engineering

Course Objectives and Links to Overall Program Goals

Students can design and develop manufacturing processes and systems that help to optimize performance of complex cyberphysical components and systems. With the emergence of the Internet of Things, this course prepares engineers to integrate and analyze big data from manufacturing, and communicate it effectively during design and development to improve design and operation of systems. Supports education program objectives to handle and use big data from manufacturing systems to optimize product design and manufacturing operations.