

KNOXVILLE, TENNESSEE

Knoxville was established in 1792 and was named after Henry Knox, President Washington's War Secretary. It is headquarters of The Tennessee Valley Authority. The Sunsphere was built for the 1982 World's Fair.

VISIT WWW.KNOXVILLE.ORG



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REGISTER

www.spc4lean.com

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Center for Renewable Carbon
The University of Tennessee Institute of Agriculture

2506 Jacobs Drive
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Advanced Analytics and Data Mining

Jan. 31, Feb. 1-2, 2023

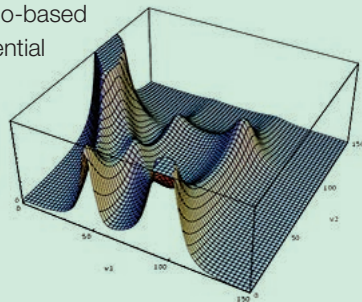
THE UNIVERSITY of
TENNESSEE 
INSTITUTE of
AGRICULTURE
 AgResearch

ADVANCED SPC

Advanced Statistical Process Control (SPC) applies SPC methods to advanced data applications that occur during manufacture. The instruction is “practical” in that it focuses on immediate applications of Advanced SPC for variation reduction of key process variables and product attributes, e.g., weight, thickness, resin usage, line speed, time-to-final thickness, etc.

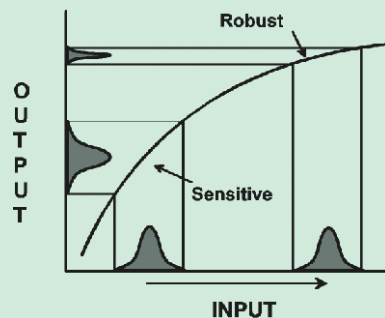
DATA MINING

A driving force in the rapidly changing global economy is the power of information technology. Information and computing technologies have changed modern manufacturing. Data mining (DM) is the process of automatically searching large volumes of data for patterns. We believe that rapid growth in DM applications in the bio-based products industry is essential for cost savings and business success.



ROBUST PRODUCT DESIGN

The idea behind robust product design is to improve the quality of a product by minimizing the effects of uncontrollable variation (e.g., ambient temperature, humidity, operators, etc.). Taguchi's design arrays and the “signal-to-noise” ratios are taught.



INSTRUCTOR



TIMOTHY M. YOUNG, PhD
Professor and Data Scientist

PhD NR (Statistics) The University of Tennessee

MS Statistics, (Oper. Res.) The University of Tennessee

MS Forest Economics(Statistics) University of Wisconsin

BS Forestry University of Wisconsin

Dr. Young has taught this course for over 10 years and also has 25 years of experience in the biobased and forest products industries with four years of experience in front-line MDF manufacturing.

KEY CONCEPTS TAUGHT

Autocorrelation & Control Charts

EWMA & CUSUM Control Charts

Multivariate Control Charts

Probability Density Functions (pdfs)

Model Fitting (AIC & BIC)

Sample Size Determination

Total Quality data Management (TQdM)

Least Squares Regression

Logistic Regression

Poisson Regression

PCA & Partial Least Squares

Regression Trees

Machine Learning

Random Forests

Boosted Trees

Neural Networks

COURSE DESCRIPTION

The Center for Renewable Carbon (CRC) at The University of Tennessee holds this training course which provides a comprehensive overview of the principles and analysis techniques for advanced statistical process control, probability density functions, confidence intervals, significance testing, sampling, regression analysis, decision - trees, and data mining methods. Candidates participate in hands on activities and work on PC-based exercises on real world process data for their company. The course has easy to understand texts which helps ensure a comfortable pace and a fun learning experience benefiting both the student and respective employer. The CRC offers this program to maintain a strength of providing leading practical education for the bio-based products industry.

The course requires some prior knowledge of SPC, statistics, and PC/laptop usage. The course is taught in two sessions. The course is limited to 8 candidates. The fee of \$3,250 covers lodging, food, registration, local transportation, 4 books and laptop usage. The University of Tennessee, Division of Outreach & Continuing Education will award 3.2 CEU's to each participant, who successfully completes this course. It can also be taken for 3 undergraduate credit hours and 2 graduate credit hours at UT for an additional tuition fee.

DESIGNED FOR

- *Data Scientists*
- *Analysts*
- *Innovation Directors*
- *Technical Directors*
- *QC Managers*
- *R&D Managers*