University of Pretoria Yearbook 2020

Statistical process control 780 (SPC 780)

Qualification	Postgraduate
Faculty	Faculty of Economic and Management Sciences
Module credits	15.00
Programmes	BComHons Statistics and Data Science
	BScHons Statistics and Data Science
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	STK 310, 320 or WST 311, 312, 321
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 1

Module content

Quality control and improvement. Shewhart, cumulative sum (CUSUM), exponentially weighted moving average (EWMA) and Q control charts. Univariate and multivariate control charts. Determining process and measurement systems capability. Parametric and nonparametric (distribution-free) control charts. Constructing control charts using Microsoft Excel and/or SAS. Obtaining run-length characteristics via simulations, the integral equation approach, other approximate methods and the Markov-chain approach.

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