

## Institute of Statistics



### STAT2510 Statistical quality control.

[15h] 2.5 credits

This course is taught in the 2nd semester

**Teacher(s):** Bernadette Govaerts  
**Language:** French  
**Level:** Second cycle

#### Aims

At the end of this course, the students will have gain knowledge and a critical view of the statistical tools usefull in the setup of quality insurance policy, in process control and daily follow up of analytical devices. They will be able to apply these tools to industrial data sets.

#### Main themes

- Statistical tools for quality insurance
- Principles and classes of Shewhart control charts
- CUSUM and EWMA control charts
- Control charts for autocorrelated and multivariate data
- Capability analysis
- Decomposition of sources of variability. Gauge analysis.
- Reception sampling

#### Content and teaching methods

The themes discussed in this course are :

- Statistical tools for quality insurance
- Principles and classes of Shewhart control charts
- CUSUM and EWMA control charts
- Control charts for autocorrelated and multivariate data
- Capability analysis
- Decomposition of sources of variability. Gauge analysis.
- Reception sampling

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites

Basic course in statistics

Reference :

D. C. Montgomery, Statistical Quality Control. New York: Wiley, second edition

For more information:

<http://www.stat.ucl.ac.be/cours/stat2510/index.html> <http://www.stat.ucl.ac.be/cours/stat2510/index.html>

**Other credits in programs**

<b>BIR22/1A</b>	Deuxième année du programme conduisant au grade de bio-ingénieur: sciences agronomiques (Sciences, technologie et qualité des aliments)	(2.5 credits)	Mandatory
<b>INCH22</b>	Deuxième année du programme conduisant au grade d'ingénieur civil chimiste	(2.5 credits)	
<b>STAT21MS/ST</b>	Première année du master en statistique, orientation générale, à finalité spécialisée (sciences et technologie)	(2.5 credits)	
<b>STAT22MS/ST</b>	Deuxième année du master en statistique, orientation générale, à finalité spécialisée (sciences et technologie)	(2.5 credits)	
<b>STAT3DA/B</b>	diplôme d'études approfondies en statistique (biostatistique et épidémiologie)	(2.5 credits)	
<b>STAT3DA/P</b>	diplôme d'études approfondies en statistique (pratique de la statistique)	(2.5 credits)	