

Department of Mathematics  
 Institut Teknologi Sepuluh Nopember  
 email : matematika@its.ac.id – web : <https://www.its.ac.id/matematika>

<b>Course</b>	<b>Course Name</b> : Quality Control
	<b>Course Code</b> : KM184720
	<b>Credit</b> : 2
	<b>Semester</b> : 7

<b>Description of Course</b>	
<p>In this course we introduce about the concept of control and quality improvement statistically. Further discussed about methods of control and quality improvement based on statistics such as control charts, process capability, acceptance sampling and operating characteristic curves.</p>	
<b>Learning Outcome</b>	
PLO 2	[C3] Students are able to solve simple and practical problems by applying basic mathematical statements, methods and computations
PLO 3	[C4] Students are able to analyze simple and practical problems in at least one field of analysis, algebra, modeling, system optimizations and computing sciences
PLO 4	[C5] Students are able to work on a simple and clearly defined scientific task and explain the results, both written and verbally either on the area of pure mathematics or applied mathematics or computing sciences
PLO 5	[C3] Students are able to make use of the principles of long life learning to improve knowledge and current issues on mathematics
<b>Course Learning Outcome</b>	
<ol style="list-style-type: none"> <li>1. Able to understand the concept of control and quality improvement statistically from a process and analyze it.</li> <li>2. Be able to identify and analyze quality data in a process to draw conclusions about the quality and ability of the process and present it scientifically</li> </ol>	

3. Able to complete and provide alternative solutions in quality improvement with the approach being studied both independently and in teamwork

**Main Subject**

Concept of control and quality improvement, quality control methods, sample and population, descriptive statistics, opportunity distribution, inferencing statistics, parameters and statistics, sampling concepts, parameter estimation, confidence interval, hypothesis testing. Graph handler, process capability, acceptance sampling, operating characteristic curve.

**Prerequisites**

Statistical Methods  
Probability Theory

**Reference**

1. Mitra A, "Fundamentals of Quality Control and Improvement", Jon Wiley and Sons Inc, 2008.
2. Montgomery C. Douglas, Statistical Quality Control, Wiley, 2009

**Supporting Reference**