INSTITUT TEKNOLOGI SEPULUH NOPEMBER
FACULTY OF SCIENCE AND DATA ANALYTICS
DEPARTMENT OF STATISTICS
STATISTICS UNDERGRADUATE PROGRAM

Course	Course Name	:	**Statistical Quality Control**
	Course Code	:	SS234415
	Credit	:	3 SKS
	Semester	:	IV

COURSE DESCRIPTION

Statistical Quality Control is a part of the courses in business and industry fields. The objective of this course is to make the students able to select the appropriate statistical methods in monitoring the product quality and process, particularly in the manufacturing industry. The materials are relating to the concept of quality improvement, seven statistics tools to improve the quality, control chart, the calculation of capability process, measurement system analysis, and acceptance sampling design. To complete the objective, the learning strategies used are discussion, presentation and practice, presentation, and written test.

PROGRAM LEARNING OUTCOME

PLO-6	Able to design, collect, and perform data management with the right methodology.
PLO-7	Able to use modern computing devices to solve statistical problems
PLO-8	Able to use computational techniques to solve statistical problems
PLO-9	Able to apply statistical methods to analyze theoretical and real problems.
PLO-10	Able to apply business, industrial, economic, social, health or environmental statistical methods to real problems

COURSE LEARNING OUTCOME

CLO.1	Able to apply the knowledge of statistical quality control
CLO.2	Able to design and collect the data using the appropriate statistical quality control method
CLO.3	Able to analyze the data using appropriate statistical quality control methods and interpret the results
CLO.4	Able to identify, formulate, and solve the problem in statistical quality control at various fields

MAIN SUBJECT

1. Quality improvement, quality design, and quality conformance
2. Seven statistics tools, variation and the relationship between control chart and hypothesis testing
3. Source of out of control event
4. Requirement of the capability process
5. CUSUM, EWMA, and Demerit Diagram
6. T2 Hotteling, and GV Diagram

7. Measurement System Analysis
8. Acceptance Sampling and Double Acceptance Sampling
9. Mil-Std 105D and Mil-Std 414

PREREQUISITE

Introduction to Statistical Methods

REFERENCES

1. Montgomery, D.C., 2012. Introduction to statistical Quality Control. 7th edition. USA: John Wiley and Sons Inc.
2. Leavenworth, G.E. and Grant, R.S., 1988. Statistical Quality Control. USA: McGraw-Hill.
3. Besterfield, D.H., (2009), Quality Control 8th, Pearson International Edition, USA
4. Quesenberry, C.P., 1997. SPC Methods for Quality Improvement. USA: John Wiley and Sons Inc.
5. Duncan, A.J., (1986), Quality Kontrol and Industrial Statistics 5ed, Irwin, USA