



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

Course

Course Name	:	Reliability Analysis
Course Code	:	SS234630
Credit	:	3 SKS
Semester	:	VI

COURSE DESCRIPTION

Reliability is one of the courses in the industrial sector which has a field of study to determine the reliability of a tool. The purpose of studying reliability is to know the application of the Statistical method to determine the reliability and maintenance time of a tool and system, and to be able to perform reliability data analysis. The learning strategy used is discussion and practice as well as presentation assignments that come from scientific publications through journals, proceeding, and others.

PROGRAM LEARNING OUTCOME

PLO-7	Able to use modern computing devices 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, environmental or health statistical methods to real problems

COURSE LEARNING OUTCOME

CLO.1	Able to describe the concept of reliability to determine the reliability of a component or system
CLO.2	Able to explain reliability, maintainability, and availability analysis procedures to determine the reliability of components or systems.
CLO.3	Able to apply reliability models in the industry to analyze data
CLO.4	Able to identify, formulate, and solve statistical problems in the field of reliability analysis
CLO.5.	Able to use modern computing techniques and computer equipment needed to solve reliability optimization problems
CLO 6.	Have knowledge of current and upcoming issues related to the field of reliability analysis

MAIN SUBJECT

1. Failure distribution
2. Constant failure rate model
3. Reliability parameters for time-dependent failure models
4. Reliability measures of a system.
5. Reliability measures of a State-dependent system with Markov analysis
6. Maintainability

- 7. Availability
- 8. Treatment
- 9. Failure data analysis

PREREQUISITE

Mathematics Statistics

REFERENCES

1. Dhillon, B. S., 2006. Maintainability, maintenance, and reliability for engineers. CRC Press Taylor dan Francis Group.
2. Ebeling, C., 2010. An Introduction to Reliability and Maintainability Engineering. 2nd edition. Canada : Waveland Press, Inc.