



MODULE HANDBOOK INTRODUCTION TO RISK ANALYSIS

**BACHELOR DEGREE PROGRAM
DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND DATA ANALYTICS
INSTITUT TEKNOLOGI SEPULUH NOPEMBER**

MODULE HANDBOOK INTRODUCTION TO RISK ANALYSIS

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| Module name | Introduction to Risk Analysis | |
| Module level | Undergraduate | |
| Code | KM184823 | |
| Course (if applicable) | Statistic Method Probability Method | |
| Semester | Spring (Genap) | |
| Person responsible for the module | Endah Rokhmati MP, S.Si, MT, Ph.D | |
| Lecturer | Endah Rokhmati MP, S.Si, MT, Ph.D | |
| Language | Bahasa Indonesia and English | |
| Relation to curriculum | Undergraduate degree program, elective , 8 th semester. | |
| Type of teaching, contact hours | Lectures, <60 students | |
| Workload | <ol style="list-style-type: none"> 1. Lectures : 2 x 50 = 100 minutes per week. 2. Exercises and Assignments : 2 x 60 = 120 minutes (2 hours) per week. 3. Private learning : 2 x 60 = 120 minutes (2 hours) per week. | |
| Credit points | 2 credit points (sks) | |
| Requirements according to the examination regulations | A student must have attended at least 80% of the lectures to sit in the exams. | |
| Mandatory prerequisites | - | |
| Learning outcomes and their corresponding PLOs | <p>Course Learning Outcome (CLO) after completing this module,</p> <p>CLO 1: Students are able to explain concept and methodology in risk analysis theory</p> <p>CLO 2: Students recognize risk models in insurance and other fields.</p> <p>CLO 3: Students are able to use risk models to analyze a risk in insurance and other fields.</p> <p>CLO 4: Students are able to present the results of the analysis using the methods studied for simple problems</p> | |
| Content | <p>This course presents the basics of risk theory, uncertainty, opportunity, opportunity distribution, statistical data, data matching, aggregate distribution, forecasting with uncertainty, modeling correlation, copula, optimization in risk analysis. The presentation of related theories is accompanied by a discussion of applications in the insurance sector and several other fields such as project risks, food safety assessment and imported goods.</p> | |

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| Study and examination requirements and forms of examination | <ul style="list-style-type: none"> • In-class exercises • Assignment 1, 2, 3 • Mid-term examination • Final examination |
| Media employed | LCD, whiteboard, websites (myITS Classroom), zoom. |
| Reading lists | <p>Main :</p> <ol style="list-style-type: none"> 1. Quantitative Risk Analysis, David Vose, Wiley, 2009 <p>Supporting :</p> <ol style="list-style-type: none"> 1. Probability and Risk Analysis, Igor Rychlik and Jesper Ryden, Springer, 2006 |