MODULE HANDBOOK
Optimization Topic

MASTER DEGREE PROGRAM
DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND DATA ANALYTICS

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

Module name	**Optimization Topic**
Module level	Master
Code	KM185388
Course (if applicable)	Optimization Topic
Semester	Fall (Ganjil)
Person responsible for the module	Dr. Tahiyatul Asfihani, S.Si, M.Si
Lecturer	Dr. Tahiyatul Asfihani, S.Si, M.Si
Language	Bahasa Indonesia and English
Relation to curriculum	Master degree program, **elective**, 3rd semester.
Type of teaching, contact hours	Lectures, <60 students
Workload	1. Lectures : 3 x 50 = 150 minutes per week. 2. Exercises and Assignments : 3 x 60 = 180 minutes (3 hours) per week. 3. Private learning : 3 x 60 = 180 minutes (3 hours) per week.
Credit points	3 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 ILOs	Course Learning Outcome (CLO) after completing this module, CLO-1 : Students are able to understand optimization problems by forming mathematical models of real optimization problems, solving them both analytically and numerically and analyzing the results well. CLO-2 : Students are able to work together in analyzing and solving optimization problems CLO-3 : Students are able to communicate scientifically both in writing and orally	
Content	This course presents the latest topics in the field of optimization. The study of papers and papers related to the topic is then presented by

	students in the form of presentations. From this lecture, it is hoped that thesis topics will emerge
Study and examination requirements and forms of examination	- In-class exercises - Assignment 1, 2, 3 - Mid-term examination - Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading list	1. Ruhul A. Sarker and Charles S. Newton, "Optimization Modelling, A Practical Approach", CRC Press, 2008 2. Jan A. Snyman, "Practical Mathematical Optimization", Springer, 2005 3. E. F. Camacho and C. Bordons, "Model Predictive Control", Springer, 1999