# MODULE HANDBOOK
# MATHEMATICAL METHODS

## BACHELOR DEGREE PROGRAM
## DEPARTMENT OF MATHEMATICS
## FACULTY OF SCIENCE AND DATA ANALYTICS

## INSTITUT TEKNOLOGI SEPULUH NOPEMBER

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# MATHEMATICAL METHODS

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| Module name | **Mathematical Methods** |
| Module level | Bachelor |
| Code | KM184603 |
| Course (if applicable) | Mathematical Methods |
| Semester | Spring (Genap) |
| Person responsible for the module | Drs. Sentot Didik Surjanto, M.Si |
| Lecturer | Drs. Sentot Didik Surjanto, M.Si |
| Language | Bahasa Indonesia and English |
| Relation to curriculum | Bachelor degree program, **mandatory**, 6th semester. |
| Type of teaching, contact hours | Lectures, <60 students |
| Workload | 1. Lectures : 3 x 50 = 150 minutes per week.<br>2. Exercises and Assignments : 3 x 60 = 180 minutes (2 hours) per week.<br>3. Private learning : 3 x 60 = 180 minutes 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 PLOs | Course Learning Outcome (CLO) after completing this module,<br>CLO 1 - Students understand the basic concepts of mathematical methods.<br>CLO 2 - Students are able to apply basic mathematical methods in solving real problems. |
| Content | This course equips students with certain methods in solving real problems such as signal refinement, magnetic fields and approach solutions. This course supports higher-level courses such as mathematical modeling, probability theory, image processing and boundary value problems.<br>The course material includes: Special functions (Gamma, Beta, Bessel, Legendre) and transformations (Laplace and Fourier transforms). |
| Study and examination requirements and forms of examination | • In-class exercises<br>• Assignment 1, 2, 3<br>• Mid-term examination<br>• Final examination |
| Media employed | LCD, whiteboard, websites (myITS Classroom), zoom. |

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| Reading lists | Main :<br>1. Potter dan Goldberg, “Mathematical Methods”, Prentice Hall International, New Jersey, 1987<br>2. Erwin Kreyzig, “Advance Engineering Mathematics 9th edition ”, Jon Wiley and Sons Inc, 2006.<br>3. Usadha, IGN, “Modul Ajar Metode Matematika, 2009<br>Supporting :<br>- |