Course Code	TKIE161201
Course Name	Electrical Engineering Mathematic (Course + Tutorial)
Course Instructors	Igi Ardiyanto; F. Danang Wijaya; Noor Akhmad Setiawan; Adha Imam Cahyadi; Indah Soesanti
Course Type	Required
Course Classification	Basic Science & Math
Credit / Contact Hour per Week	3 / 150 minutes per Week
Course Description	Describes the principles of Vectors and Vector Spaces, Vector Differential Calculus, Curve Integral, Surface Integral, Analytic Functions, Elementary Functions, Complex Integral, Complex Series, and Residue Techniques.
Prerequisites Courses	Engineering Mathematics (TKIE161101)
Covered Student Outcome	**Fundamental and Engineering Knowledge (a)** **Development of Engineering Solution (b)**

Learning Outcome	1. Students are able to explain the concept of Vector, Vector Space, and Vector Differential Calculus. 2. Students are able to apply and solve problems related to the concept of curve integral, surface integral, and complex integral. 3. Students are able to explain concepts of analytical function and elementary function. 4. Students are able to apply and solve problems using residue technique.
Topic	1. Vector and Vector Space 2. Vector Differential Calculus 3. Curve Integral 4. Surface Integral 5. Analytical Function 6. Elementary Function 7. Complex Integral 8. Complex Series 9. Residue Techniques
Direct Asessment	**Direct Asessment Plan** / **Measured Learning Outcome** Mid Exam / LO1, LO2 Final Exam / LO3, LO4
Indirect Assesment	Questionnaire and direct communication
References	[1] Erwin Kreyzig, Advanced Engineering Mathematics, John Wiley & Sons, 1988 [2] Thomas Calculus, George B. Thomas, Jr, Addison, Wesley Publishing Company, 2001 [3] Brown, J., Churcill, R., Complex variables and application. 1960. [4] Zill, D.G., Wright, W., Advanced Engineering Mathematics, 1992