

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	-											
<b>Covered Student Outcome</b>	<b>Fundamental Engineering Knowledge (a)</b> <b>Development of Engineering Solution (b)</b>											
Learning Outcome												
		Study Program Student Outcome										
No	Learning Outcome	SO (a) – SO (k)										
1.	Students can explain the concept of Vector, Vector Space, and Vector Differential Calculus.	Fundamental Engineering Knowledge										
2.	Students are able to describe and solve problems related to the concept of integral, include curve, surface, and complex.	Development of Engineering Solution										
3.	Students are able to explain concepts of analytical function.	Fundamental Engineering Knowledge										
4.	Students are able to explain concepts of elementary function.	Fundamental Engineering Knowledge										
5.	Students are able to explain concept of complex series and residue technique.	Fundamental Engineering Knowledge										
6.	Students are able to solve complex-related and residue problems.	Development of Engineering Solution										
Topic	<ol style="list-style-type: none"> <li>1. Vector and Vector Space</li> <li>2. Vector Differential Calculus</li> <li>3. Curve Integral</li> <li>4. Surface Integral</li> <li>5. Analytical Function</li> <li>6. Elementary Function</li> <li>7. Complex Integral</li> <li>8. Complex Series</li> <li>9. Residue Techniques</li> </ol>											
<b>Direct Assessment</b>	<table border="1"> <thead> <tr> <th>Direct Assessment Plan</th> <th>Measured Learning Outcome</th> </tr> </thead> <tbody> <tr> <td>Mid Exam</td> <td>LO1, LO2</td> </tr> <tr> <td>Final Exam</td> <td>LO3, LO4</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Direct Assessment Plan	Measured Learning Outcome	Mid Exam	LO1, LO2	Final Exam	LO3, LO4				
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	Mid Exam	LO1, LO2										
	Final Exam	LO3, LO4										
Indirect Assesment	Questionnaire and direct communication											
References	<ol style="list-style-type: none"> <li>[1] Erwin Kreyzig, Advanced Engineering Mathematics, John Wiley &amp; Sons, 1988</li> <li>[2] Thomas Calculus, George B. Thomas, Jr, Addison, Wesley Publishing Company, 2001</li> <li>[3] Brown, J., Churcill, R., Complex variables and application. 1960.</li> <li>[4] Zill, D.G., Wright, W., Advanced Engineering Mathematics, 1992</li> </ol>											

