



MODULE HANDBOOK DESCRIPTION

Module designation	<i>Engineering Mathematics I</i>	
Code	<i>FBS2120</i>	
Semester(s) in which the module is taught	<i>3/second year</i>	
Person responsible for the module	<i>Supriono, S.T., M.T.</i>	
Language	<i>Indonesian</i>	
Relation to curriculum	<i>Compulsory for all major</i>	
Teaching methods	<i>lectures, small group discussion, case base method.</i>	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: <ul style="list-style-type: none"> • Lectures: 3 x 50 minutes • Exercises and Assignments: 3 x 60 minutes • Self-study: 3 x 60 minutes. Total study hours = 8 hours 30 minutes/week.	
Credit points	<i>3 SKS (~ 4.8 ECTS)</i>	
Required and recommended prerequisites for joining the module	Calculus I (FBS1104) Calculus II (FBS1212)	
Module objectives/intended learning outcomes	<i>1. Students are able to understand First-Order Differential Equation, Second-Order Differential Equation, Laplace Transforms, Fourier Series, and Fourier Transform</i>	<i>PLO2</i>
	<i>2. Students are able to analyse electrical circuit problems using First-Order Differential Equation, Second-Order Differential Equation, and Fourier Series</i>	<i>PLO3</i>
	<i>3. Students are able to solve electrical circuits problems using Laplace Transforms in teamwork.</i>	<i>PLO7</i>
Content	<ol style="list-style-type: none"> <i>1. First-Order Differential Equation.</i> <i>2. Second-Order Differential Equation.</i> <i>3. Laplace Transforms.</i> <i>4. Fourier Series and Fourier Transform</i> 	

Examination forms	<ul style="list-style-type: none"> - <i>Written case study</i> - <i>Midterm and final test</i>
Study and examination requirements	<p><i>The final grade in the module is composed of:</i></p> <ul style="list-style-type: none"> <i>a. Case assessment: 30%</i> <i>b. Midterm assessment: 35%</i> <i>c. Final assessment: 35%</i> <p><i>Students must have a final grade of 65% or higher to pass</i></p>
Reading list	<ol style="list-style-type: none"> <i>1. Supriono, 2018, Matematika Teknik I, Universitas Mataram Press.</i> <i>2. Erwin Kreyszig, 2011, Advanced Engineering Mathematics 10th Ed., John Wiley & Sons.</i> <i>3. Dean G. Duffy, 2009, Advanced Engineering Mathematics with MATLAB 2nd Ed. Chapman & Hall.</i> <i>4. Philip P.G. Dyke, 2004, An Introduction to Laplace Transforms and Fourier Series, Springer Undergraduate Mathematics Series.</i>