



**MODULE HANDBOOK DESCRIPTION**

Module designation	<i>Science and Technology Concept</i>
Code	<i>FBS1106</i>
Semester(s) in which the module is taught	<i>1 / first year</i>
Person responsible for the module	<ul style="list-style-type: none"> <li>- <i>Supriyatna, ST., MT.</i></li> <li>- <i>DR. Ida Ayu Sriadnyani, ST., M.Erg.</i></li> <li>- <i>Giri Wahyu Wiriasto, ST. M.Eng.S</i></li> <li>- <i>Suthami Ariesaputra, ST., M.Eng.</i></li> </ul>
Language	<i>Indonesian</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<ul style="list-style-type: none"> <li>- <i>lectures,</i></li> <li>- <i>small group discussion,</i></li> <li>- <i>case base method,</i></li> <li>- <i>team-project based method</i></li> </ul>
Workload (incl. contact hours, self-study hours)	<p>Contact minutes every week, each week of the 16 weeks/semester:</p> <ul style="list-style-type: none"> <li>• Lectures : 2 x 50 minutes</li> <li>• Exercises and assignments : 2 x 60 minutes</li> <li>• Private learning : 2 x 60 minutes.</li> </ul> <p>total study hours = 5 hours 40 minutes/week</p>
Credit points	<i>2 SKS (~ 3,2 ECTS)</i>
Required and recommended prerequisites for joining the module	-

<p>Program Learning Outcomes (PLO)</p>	<ol style="list-style-type: none"> <li>1. <b>Knowledge (PLO2)</b> <i>Able to apply knowledge of science and mathematics, electrical technology, information technology and/or materials technology to gain a thorough understanding of the principles in the field of electrical engineering</i></li> <li>2. <b>Engineering Analysis (PLO3)</b> <i>Able to choose method, make literature reviews, design experiments with simulations, and analyzer result to reach the right conclusion, as well as develop guidelines for using tools.</i></li> <li>3. <b>Lifelong learning (PLO9)</b> <i>Able to understand the need for life-long learning with data literacy, technology literacy, information literacy and human literacy</i></li> </ol>	
<p>Module objectives/intended learning outcomes</p>	<ol style="list-style-type: none"> <li>1. <i>Student are able to understand the relationship between humans, nature, science, technology and prosperity</i></li> </ol>	<p>PLO9</p>
	<ol style="list-style-type: none"> <li>2. <i>Student are able to apply conceptual, critical, creative and innovative thinking</i></li> </ol>	<p>PLO3</p>
	<ol style="list-style-type: none"> <li>3. <i>Student are able to apply scientific methods to simple science problems</i></li> </ol>	<p>PLO3</p>
	<ol style="list-style-type: none"> <li>4. <i>Student are able to understand the development and role of technology.</i></li> </ol>	<p>PLO2</p>
	<ol style="list-style-type: none"> <li>5. <i>Student are able to understand of engineer profession</i></li> </ol>	<p>PLO9</p>
	<ol style="list-style-type: none"> <li>6. <i>Student are able to understand to applied of science, technology and art at Indonesia.</i></li> </ol>	<p>PLO2</p>
	<ol style="list-style-type: none"> <li>7. <i>Student are able to apply modelling and systems</i></li> </ol>	<p>PLO3</p>
	<ol style="list-style-type: none"> <li>8. <i>Student are able to design simple equipment or system using the design method</i></li> </ol>	<p>PLO3</p>
<p>Content</p>	<ol style="list-style-type: none"> <li>1. <i>Introduction to Science and Technology Concept</i></li> <li>2. <i>Human, Nature, Science, Technology and Prosperity</i></li> <li>3. <i>Conceptive, Critical, Creative and Innovative Thinking</i></li> <li>4. <i>Sciences Development</i></li> <li>5. <i>Scientific Method</i></li> <li>6. <i>Development and Role of Technology</i></li> <li>7. <i>Engineering Profession</i></li> <li>8. <i>Science, Technology and Art in Indonesia</i></li> <li>9. <i>Model and System</i></li> <li>10. <i>Design Method.</i></li> </ol>	

Examination forms	<ul style="list-style-type: none"> <li>- <i>Written case study</i></li> <li>- <i>Written and oral case study</i></li> <li>- <i>Essay midterm and final test</i></li> </ul>
Study and examination requirements	<p><i>The final grade in the module is composed of:</i></p> <ul style="list-style-type: none"> <li><i>a. Case I assessment : 10 %</i></li> <li><i>b. Case II assessment : 15 %</i></li> <li><i>c. Team-Project assessment : 25 %</i></li> <li><i>d. Written Midterm assessment : 20%</i></li> <li><i>e. Written Final assessment : 30%</i></li> </ul> <p><i>Students must have a final grade of 65% or higher to pass</i></p>
Reading list	<ol style="list-style-type: none"> <li>1. Paul H. Wright, 2005; Pengantar Engineering ed-3 terjemahan, Erlangga, Jakarta</li> <li>2. Tim Dosen Konsep Sains dan Teknologi, 2020: Buku Ajar Konsep Sains dan Teknologi.</li> <li>3. Bryan H. Alexander, 2014; The History of Science and Technology, Houghton Mifflin Company</li> <li>4. Meijers, Anthonie, 2009; Philosophy of Technology and Engineering Sciences; Elsevier, United Kingdom.</li> </ol>