

## Modul Description

<b>Module name</b>	Course Module
<b>Module level, if applicable</b>	Bachelor of Electronics Engineering
<b>Code, if applicable</b>	5215-180-2
<b>Subtitle, if applicable</b>	-
<b>Course, if applicable</b>	Electrical Circuit II
<b>Semester(s) in which the module istaught</b>	II
<b>Person responsible for the module</b>	Lecturer of course
<b>Lecturer</b>	Dr.Aodah Diamah,M.Eng. ; Dr. Baso Maruddani, M.T.
<b>Language</b>	Indonesian Language [Bahasa Indonesia]
<b>Relation to Curriculum</b>	This course is a compulsory course and offered in the 2 <sup>nd</sup> semester.
<b>Type of teaching, contact hours</b>	<p>Teaching methods used in this course are:</p> <ul style="list-style-type: none"> <li>- Lecture (i.e., group investigation, small group discussion, casestudy, and video based learning)</li> <li>- Structured assignments (i.e., essays and case study)</li> <li>- Practice (i.e., computer simulation and case study in laboratory)</li> </ul> <p>The class size for lecture is 30 students. Contact hours for lecture is 27 hours, assignments is 32 hours</p>
<b>Workload</b>	<p>For this course, students are required to meet a minimum of 91 hours in one semester, which consist of:</p> <ul style="list-style-type: none"> <li>- 27 hours for lecture,</li> <li>- 32 hours for structured assignments,</li> <li>- 32 hours for private study,</li> </ul>
<b>Credit points</b>	2 credit points (equivalent with 2.88 ECTS)
<b>Requirements according to the examination regulations</b>	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.
<b>Recommended prerequisites</b>	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.

<p><b>PLO-CLO-ILO</b></p>	<p>After completing the course and given with this case:</p> <p><b>Course Learning Objectives (CLO1):</b> Mahasiswa mampu memahami prosedur rangkaian (K1) (10)</p> <p><b>Course Learning Objectives (CLO2):</b> Mahasiswa mampu menerapkan teknik pemakaian dan perhitungan metode transformasi rangkaian (K2, S1, S3, C1, C2) (30)</p> <p><b>Course Learning Objectives (CLO3):</b> Mahasiswa mampu memahami hubungan antara time respons dan frekuensi respons (K1) (10)</p> <p><b>Course Learning Objectives (CLO4):</b> Mahasiswa mampu menerapkan simulasi dan pengujian rangkaian listrik menggunakan software aplikasi elektronika (K2, S1, S3, C1, C2) (50)</p> <p><b>Program Learning Outcomes (PLO3):</b> Menerapkan kompetensi teknik elektronika untuk memecahkan masalah keteknikan</p> <p><b>Knowledge (K1):</b> Menerapkan matematika, ilmu dasar dan teknik dasar untuk merancang dan menganalisis untuk memecahkan masalah di bidang teknik elektronika.</p> <p><b>Knowledge (K2):</b> Untuk menerapkan prinsip-prinsip teknik elektronik untuk memecahkan masalah dalam sistem teknik elektronik</p> <p><b>Engineering and Education Skill (S2):</b> Mampu menganalisis prinsip kerja dan penerapan sistem rekayasa elektronik</p> <p><b>Engineering and Education Skill (S3):</b> Mampu mencari alternatif solusi dan pemecahan masalah di bidang teknik elektronika.</p> <p><b>Competence (C2):</b> Mampu mengelola dan mengembangkan proses, sistem operasi, dan peralatan dengan mempertimbangkan dampak teknis dan nonteknis dari kegiatan industri di bidang teknik elektronika.</p>
<p><b>Content</b></p>	<p><b>Students will learn about:</b> Tujuan mata kuliah ini untuk mengetahui dan menguasai prosedur, teknik pemakaian dan perhitungan metode transformasi rangkaian dan memahami hubungan antara time respons dan frekuensi respons. Materi perkuliahan meliputi rangkaian transien (RL, RC dan RLC dengan sumber searah dan bolak-balik); daya 1 fasa (daya sesaat, daya rata-rata, harga efektif, daya nyata, faktor daya</p>

	<p>dan koreksinya, segitiga daya); sistem fasa banyak (tegangan dan arus pada sistem 3 phasa, beban seimbang-tidak seimbang pada sistem 3 phasa, beban bintang dan segitiga pada sistem 3 phasa); kopling magnetik (induktansi sendiri, induktansi bersama, koefisien kopling, analisa rangkaian kopling, transformator linier, transformator ideal); jaringan dua pintu (parameter admitansi, parameter impedansi, parameter hibrida, parameter transmisi, beberapa jaringan ekuivalen). Melakukan simulasi dan pengujian rangkaian listrik menggunakan software aplikasi elektronika.</p>
<b>Forms of Assessment</b>	<p>Assessment is carried out based on written examinations, assessment/evaluation of the learning process and performance with the following components: Structured tasks: 20% ; Quiz 10% ; Mid Test : 35% Final Test: 35%</p>
<b>Study and examination requirements and forms of examination</b>	<p><b>Study and examination requirements:</b></p> <ul style="list-style-type: none"> <li>- Students must attend 15 minutes before the class starts.</li> <li>- Students must switch off all electronic devices.</li> <li>- Students must inform the lecturer if they will not attend the class due to sickness, etc.</li> <li>- Students must submit all class assignments before the deadline.</li> <li>- Students must attend the exam to get final grade.</li> </ul> <p><b>Form of examination:</b> Written exam: Essay</p>
<b>Media employed</b>	<p>Direct Whiteboard and Power Point Presentation.</p>
<b>Reading list</b>	<ol style="list-style-type: none"> <li>1. Sudirham, Sudaryatno. 2012. Analisis Rangkaian Listrik jilid 1. Bandung: Darpublic.</li> <li>2. Sudirham, Sudaryatno. 2012. Analisis Rangkaian Listrik jilid 2. Bandung: Darpublic</li> <li>3. Karris, S.T., 2003. Circuit Analysis I with Matlab Application. California: Orchard Publication.</li> <li>4. Karris, S.T., 2003. Circuit Analysis II with Matlab Application. California: Orchard Publication.</li> </ol>