

		UNIVERSITAS SUMATERA UTARA (USU) FAKULTAS TEKNIK DEPARTEMEN TEKNIK ELEKTRO				Kode Dokumen
RENCANA PEMBELAJARAN SEMESTER						
MATA KULIAH (MK)	KODE	Rumpun MK	BOBOT (sks)		SEMESTER	Tgl Penyusunan
Rangkaian Listrik 1	TEE1110		Teori 2	Praktek 0		7 AGUSTUS 2022
OTORISASI / PENGESAHAN	Dosen Pengembang RPS		Koordinator RMK		Ka Prodi	
	Ir. Raja Harahap, MT				Suherman, ST., M.Comp., Ph.D	
Capaian Pembelajaran	CPL-PRODI yang dibebankan pada MK					
	CPL-1	Mampu menerapkan pengetahuan matematika, ilmu pengetahuan alam/atau material, teknologi informasi dan kerekayasaan untuk mendapatkan pemahaman menyeluruh tentang prinsip-prinsip Teknik Elektro.				
	CPL-2	Mampu mendesain komponen, sistem dan/atau proses untuk memenuhi kebutuhan yang diharapkan oleh masyarakat dengan dihadapkan pada batasan realistik yang meliputi aspek hukum, ekonomi, lingkungan, sosial, politik, kesehatan dan keselamatan, keberlanjutan.				
	CPL-3	Mampu mendesain eksperimen laboratorium dan/atau lapangan serta menganalisis dan mengartikan data untuk memperkuat penilaian teknik khususnya dalam bidang Teknik Elektro.				
	CPL-4	Mampu menyelesaikan permasalahan teknik khususnya dalam bidang Teknik Elektro secara bertanggungjawab dan memenuhi etika profesi.				
	CPL-5	Mampu menerapkan metode, keterampilan dan perangkat teknik modern yang diperlukan untuk praktek profesi Teknik Elektro.				
	CPL-6	Mampu berkomunikasi secara efektif, baik lisan maupun tulisan.				
	CPL-7	Mampu mengevaluasi tugas-tugas dalam batasan yang ada secara disiplin dan menyeluruh.				

	CPL-8	Mampu untuk bekerja dalam tim lintas disiplin dan multikultural serta global internasional.											
	CPL-9	Mampu untuk bertanggung jawab kepada masyarakat dan mematuhi etika profesi dalam menyelesaikan permasalahan Teknik Elektro.											
	CPL-10	Memiliki kapasitas pembelajaran sepanjang hayat termasuk akses pengetahuan yang relevan tentang isu-isu terkini.											
	CPL-11	Mampu mengidentifikasi potensi daerah di Sumatera Utara dan menerapkan inovasi, metode, keterampilan, dan perangkat teknik elektro yang relevan untuk mengembangkan potensi daerah tersebut.											
	CPL-12	Mampu mendesain sistem dan/atau proses untuk memanfaatkan energi baru dan terbarukan sebagai sumber energi listrik alternatif dari potensi sumber daya lokal dan nasional dengan wawasan global.											
	Capaian Pembelajaran Mata Kuliah (CPMK)												
	CPMK 1	Memahami dasar rangkaian listrik											
	CPMK 2	Memahami dasar-dasar teori dan hukum pada rangkaian listrik sederhana dan kompleks											
	CPMK 3	Memahami secara logis teknik penyelesaian persoalan pada rangkaian listrik dan perubahan rangkaian											
	CPMK 4	Mengenal konsep dasar dan analisis yang digunakan pada rangkaian listrik											
Peta CPL – CPMK		CPL 01	CPL 02	CPL 03	CPL 04	CPL 05	CPL 06	CPL 07	CPL 08	CPL 09	CPL 10	CPL 11	CPL 12
	CPMK 1	V	V	V	V	V	V						
	CPMK 2	V	V	V	V	V	V	V	V	V	V		
	CPMK 3				V	V	V	V	V	V	V	V	V
	CPMK 4										V	V	V
Diskripsi Singkat MK	Mata kuliah ini mencakup masalah pengertian dasar rangkaian listrik, sistem satuan, Hukum Kirchoff, Hukum Ohm, arus, dan tegangan, harga rata-rata dan harga efektif, impedansi dalam bentuk bilangan kompleks, perbedaan fasa antara dua gelombang sinusoidal, rangkaian seri dan paralel, metode analisa rangkaian, rangkaian gandeng magnetik, sistem tiga fasa dan Deret Fourier.												
Bahan Kajian: Materi pembelajaran	Kontrak Perkuliahan (Peraturan, Tugas, Buku, Sistem Penilaian) dan Konsep Perancangan; Pengertian Dasar Rangkaian Listrik; Sistem Satuan, Hukum Ohm, Daya dan Energi; Rangkaian Seri-Paralel, Hukum Kirchoff Tentang Tegangan- Arus, dan Teknik Pengukuran; Penerapan Hk. Ohm, Hk. Kirchoff Pada Rangkaian Seri dan Paralel Untuk Sumber Dc; Bentuk Gelombang Ac Sinusoidal; Bilangan Kompleks; Fasor; Impedansi dan Admitansi; Rangkaian Seri-Paralel Sumber Ac; Metode Super Posisi; Metode Thevenin dan Norton; Analisis Arus Mesh; Analisis Tegangan Simpul/Node; Perubahan Rangkaian Dari Y - Δ dan Δ - Y; Mahasiswa dapat mengerjakan latihan tentang rangkaian terdangung secara magnetik, induktansi timbal balik, aturan tangan kanan-dot energi dalam rangkaian gandeng magnetik. kontanta gandeng; Mahasiswa memahami perkembangan teori pembangkitan emf pada kumparan, hubungan sumber 3 fasa,												

	hubungan sumber dengan beban, tiga phasa seimbang, beban tiga phasa tak seimbang, daya pada sistem tiga phasa; Mahasiswa memahami bentuk eksponensial deret fourier, respons steady state fungsi periodik, spektrum daya dari sinyal periodik.
Pustaka	<p>Utama:</p> <ol style="list-style-type: none"> 1. Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company.
	<p>Pendukung:</p> <ol style="list-style-type: none"> 1. WH. Hyat, JR., JE. Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. 2. Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. 3. Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. 4. Robert L. Boylestad, 2003, <i>Introductory Circuit Analysis</i>, Tenth edition, Prentice Hall Pearson Education International. 5. A. Bruce Carlson, 2000, <i>CIRCUITS-Engineering Concepts and Analysis of Linear Electric Circuits</i>, Brooks / Cole Thomson Learning. 6. DLL.
Dosen Pengampu	Ir. Raja Harahap, MT
Matakuliah syarat	Dasar Teknik Elektro

Mg Ke-	Kemampuan akhir tiap tahapan belajar (Sub-CPMK)	Penilaian		Bantuk Pembelajaran; Metode Pembelajaran; Penugasan Mahasiswa; [Estimasi Waktu]		Materi Pembelajaran [Pustaka]	Bobot Penilaian (%)
		Indikator	Kriteria & Teknik	Tatap Muka (5)	Daring (6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Mahasiswa menguasai teori kontrak perkuliahan (peraturan, tugas, buku, sistem penilaian) dan konsep perancangan	<ol style="list-style-type: none"> <i>The accuracy in providing the information required</i> <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> <i>Reading the memo provided.</i> <i>Responding to the opening questions given.</i> <i>Completing the table (problem-solution) according to the information in the memo.</i> <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo.</i> 	<p>BM [(1x(2x60"))]</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> <i>Reviewing the previous lessons.</i> <i>Reading the added learning materials.</i> <i>Recording the presence.</i> <i>Responding to opening questions in the 'Discussion Forum' section.</i> <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))]</p> <p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System):</p>	<p>TM [(1x(2x50"))]</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> <i>Making notes of the learning materials explained.</i> <i>Responding to the questions or instructions given.</i> <i>Completing all the provided exercises individually.</i> <i>Discussing the exercises completed.</i> <p>Media: <i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran: <i>1. Online Lecture</i></p>	<p>Pokok Bahasan: Kontrak Perkuliahan (Peraturan, Tugas, Buku, Sistem Penilaian) dan Konsep Perancangan</p> <p>Referensi:</p> <ol style="list-style-type: none"> Joseph A. Edminister, Theory and Problems of Electric Circuits, Third Edition, Schaum's Outline Series McGRAW-HILL 	5%

			Classifying the words or phrases with the correct headings.	learning@usu.ac.id	2. Discussion 3. Self-Paced Learning		
2	Mahasiswa memahami pengertian dasar rangkaian listrik; sistem satuan, hukum ohm, daya dan energi	<ol style="list-style-type: none"> 1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> 1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i> 	<p>BM [(1x(2x60"))]</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))]</p>	<p>TM [(1x(2x50"))]</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i> <p>Media:</p>	<p>Pokok Bahasan: Pengertian Dasar Rangkaian Listrik; Sistem Satuan, Hukum Ohm, Daya dan Energi</p> <p>Referensi:</p> <ul style="list-style-type: none"> - WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. <p>DLL</p>	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran: 4. <i>Online Lecture</i> 5. <i>Discussion</i> 6. <i>Self-Paced Learning</i></p>		
3	Mahasiswa menguasai rangkaian seri-paralel, hukum kirchhoff tentang tegangan- arus, dan teknik pengukuran	<p>1. <i>The accuracy in providing the information required</i></p> <p>2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i></p> <p>3. <i>The correctness of the student's answers</i></p>	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <p>1. <i>Reading the memo provided.</i></p> <p>2. <i>Responding to the opening questions given.</i></p> <p>3. <i>Completing the table (problem-solution) according to the information in the memo.</i></p>	<p>BM [(1x(2x60"))</p> <p>Kegiatan:</p> <p>1. <i>Reviewing the previous lessons.</i></p> <p>2. <i>Reading the added learning materials.</i></p> <p>3. <i>Recording the presence.</i></p> <p>4. <i>Responding to opening questions in the 'Discussion Forum' section.</i></p> <p>5. <i>Submitting the assigned tasks.</i></p> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50"))</p> <p>Kegiatan:</p> <p>1. <i>Making notes of the learning materials explained.</i></p> <p>2. <i>Responding to the questions or instructions given.</i></p> <p>3. <i>Completing all the provided exercises individually.</i></p> <p>4. <i>Discussing the exercises completed.</i></p> <p>Media:</p>	<p>Pokok Bahasan: Rangkaian Seri-Paralel, Hukum Kirchhoff Tentang Tegangan- Arus, dan Teknik Pengukuran</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. 	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <ol style="list-style-type: none"> <i>Online Lecture</i> <i>Discussion</i> <i>Self-Paced Learning</i> 	DLL	
4	Mahasiswa mampu menerapkan teori penerapan hk. ohm, hk. kirchhoff pada rangkaian seri dan paralel untuk sumber dc	<ol style="list-style-type: none"> <i>The accuracy in providing the information required</i> <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> <i>Reading the memo provided.</i> <i>Responding to the opening questions given.</i> <i>Completing the table (problem-solution) according to the information in the memo.</i> 	<p>BM [(1x(2x60")) Kegiatan:</p> <ol style="list-style-type: none"> <i>Reviewing the previous lessons.</i> <i>Reading the added learning materials.</i> <i>Recording the presence.</i> <i>Responding to opening questions in the 'Discussion Forum' section.</i> <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50")) Kegiatan:</p> <ol style="list-style-type: none"> <i>Making notes of the learning materials explained.</i> <i>Responding to the questions or instructions given.</i> <i>Completing all the provided exercises individually.</i> <i>Discussing the exercises completed.</i> <p>Media:</p>	<p>Pokok Bahasan: Penerapan Hk. Ohm, Hk. Kirchhoff Pada Rangkaian Seri dan Paralel Untuk Sumber Dc</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. 	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <ol style="list-style-type: none"> 4. <i>Online Lecture</i> 5. <i>Discussion</i> 6. <i>Self-Paced Learning</i> 	DLL	
5	Mahasiswa dapat mengerjakan latihan tentang bentuk gelombang ac sinusoidal; bilangan kompleks; fasor	<ol style="list-style-type: none"> 1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> 1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i> 	<p>BM [(1x(2x60")) Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50")) Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i> <p>Media:</p>	<p>Pokok Bahasan: Bentuk Gelombang Ac Sinusoidal; Bilangan Kompleks; Fasor</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1. WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. 	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <ol style="list-style-type: none"> 7. <i>Online Lecture</i> 8. <i>Discussion</i> 9. <i>Self-Paced Learning</i> 		
6	Mahasiswa memahami perkembangan teori impedansi dan admitansi; rangkaian seri-paralel sumber ac	<ol style="list-style-type: none"> 1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> 1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i> 	<p>BM [(1x(2x60"))</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50"))</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i> <p>Media:</p>	<p>Pokok Bahasan: Mahasiswa memahami perkembangan teori impedansi dan admitansi; rangkaian seri-paralel sumber ac</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. 	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <p>10. <i>Online Lecture</i> 11. <i>Discussion</i> 12. <i>Self-Paced Learning</i></p>	DLL	
7	Mahasiswa dapat mempresentasikan pengetahuan metode super posisi	<p>1. <i>The accuracy in providing the information required</i></p> <p>2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i></p> <p>3. <i>The correctness of the student's answers</i></p>	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <p>1. <i>Reading the memo provided.</i></p> <p>2. <i>Responding to the opening questions given.</i></p> <p>3. <i>Completing the table (problem-solution) according to the information in the memo.</i></p>	<p>BM [(1x(2x60"))</p> <p>Kegiatan:</p> <p>1. <i>Reviewing the previous lessons.</i></p> <p>2. <i>Reading the added learning materials.</i></p> <p>3. <i>Recording the presence.</i></p> <p>4. <i>Responding to opening questions in the 'Discussion Forum' section.</i></p> <p>5. <i>Submitting the assigned tasks.</i></p> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50"))</p> <p>Kegiatan:</p> <p>1. <i>Making notes of the learning materials explained.</i></p> <p>2. <i>Responding to the questions or instructions given.</i></p> <p>3. <i>Completing all the provided exercises individually.</i></p> <p>4. <i>Discussing the exercises completed.</i></p> <p>Media:</p>	<p>Pokok Bahasan: Metode Super Posisi</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. <p>DLL</p>	5%

			4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i>	Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i> Moda (Learning Management System): learning@usu.ac.id	<i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i> Metode Pembelajaran: 13. <i>Online Lecture</i> 14. <i>Discussion</i> 15. <i>Self-Paced Learning</i>		
8	UJIAN TENGAH SEMESTER					15 %	
9	Mahasiswa menguasai teori metode thevenin dan northon	1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i>	Kriteria: <i>Marking Scheme</i> Bentuk: <i>Worksheet (Non-Tes)</i> 1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i>	BM [(1x(2x60"))] Kegiatan: 1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i> PT [(1x(2x60"))]	TM [(1x(2x50"))] Kegiatan: 1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i>	- WH. Hyat, JR., JE. Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. DLL	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p>Media: <i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran: 16. <i>Online Lecture</i> 17. <i>Discussion</i> 18. <i>Self-Paced Learning</i></p>		
10	Mahasiswa memahami analisis arus mesh	<ol style="list-style-type: none"> <i>The accuracy in providing the information required</i> <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> <i>Reading the memo provided.</i> <i>Responding to the opening questions given.</i> <i>Completing the table (problem-solution) according to the information in the memo.</i> 	<p>BM [(1x(2x60"))]</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> <i>Reviewing the previous lessons.</i> <i>Reading the added learning materials.</i> <i>Recording the presence.</i> <i>Responding to opening questions in the 'Discussion Forum' section.</i> <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))]</p>	<p>TM [(1x(2x50"))]</p> <p>Kegiatan:</p> <ol style="list-style-type: none"> <i>Making notes of the learning materials explained.</i> <i>Responding to the questions or instructions given.</i> <i>Completing all the provided exercises individually.</i> <i>Discussing the exercises completed.</i> <p>Media:</p>	<p>Pokok Bahasan: <i>Analisis Arus Mesh</i></p> <p>Referensi:</p> <ul style="list-style-type: none"> 1. WH. Hyat, JR., JE. Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. <p>DLL</p>	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <p>19. <i>Online Lecture</i> 20. <i>Discussion</i> 21. <i>Self-Paced Learning</i></p>		
11	Mahasiswa menguasai analisis tegangan simpul/node	<p>1. <i>The accuracy in providing the information required</i></p> <p>2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i></p> <p>3. <i>The correctness of the student's answers</i></p>	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <p>1. <i>Reading the memo provided.</i></p> <p>2. <i>Responding to the opening questions given.</i></p> <p>3. <i>Completing the table (problem-solution) according to the information in the memo.</i></p>	<p>BM [(1x(2x60"))</p> <p>Kegiatan:</p> <p>1. <i>Reviewing the previous lessons.</i></p> <p>2. <i>Reading the added learning materials.</i></p> <p>3. <i>Recording the presence.</i></p> <p>4. <i>Responding to opening questions in the 'Discussion Forum' section.</i></p> <p>5. <i>Submitting the assigned tasks.</i></p> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50"))</p> <p>Kegiatan:</p> <p>1. <i>Making notes of the learning materials explained.</i></p> <p>2. <i>Responding to the questions or instructions given.</i></p> <p>3. <i>Completing all the provided exercises individually.</i></p> <p>4. <i>Discussing the exercises completed.</i></p> <p>Media:</p>	<p>Pokok Bahasan: Analisis Tegangan Simpul/Node</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. <p>DLL</p>	5%

			<p>4. Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</p>	<p>Task 3: Restating the information obtained in the form of an a-150-words paragraph.</p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p>Power Point Presentation (PPT) Zoom Meeting Audio Recording English Handout</p> <p>Metode Pembelajaran:</p> <p>22. Online Lecture 23. Discussion 24. Self-Paced Learning</p>		
12	Mahasiswa mampu menerapkan teori perubahan rangkaian dari $y - \Delta$ dan $\Delta - y$	<p>1. The accuracy in providing the information required</p> <p>2. The student's fluency in reading the memo (spelling, intonation, and speed)</p> <p>3. The correctness of the student's answers</p>	<p>Kriteria: Marking Scheme</p> <p>Bentuk: Worksheet (Non-Tes)</p> <p>1. Reading the memo provided.</p> <p>2. Responding to the opening questions given.</p> <p>3. Completing the table (problem-solution) according to the information in the memo.</p>	<p>BM [(1x(2x60"))</p> <p>Kegiatan:</p> <p>1. Reviewing the previous lessons.</p> <p>2. Reading the added learning materials.</p> <p>3. Recording the presence.</p> <p>4. Responding to opening questions in the 'Discussion Forum' section.</p> <p>5. Submitting the assigned tasks.</p> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50"))</p> <p>Kegiatan:</p> <p>1. Making notes of the learning materials explained.</p> <p>2. Responding to the questions or instructions given.</p> <p>3. Completing all the provided exercises individually.</p> <p>4. Discussing the exercises completed.</p> <p>Media:</p>	<p>Pokok Bahasan: Perubahan Rangkaian Dari $Y - \Delta$ dan $\Delta - Y$</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. <p>DLL</p>	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <p>25. <i>Online Lecture</i> 26. <i>Discussion</i> 27. <i>Self-Paced Learning</i></p>		
13	<p>Mahasiswa dapat mengerjakan latihan tentang rangkaian terdangeng secara magnetik ,induktansi timbal balik, aturan tangan kanan-dot energi dalam rangkaian gangdeng maknetik. kontanta gangdeng</p>	<p>1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i></p>	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <p>1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i></p>	<p>BM [(1x(2x60")) Kegiatan:</p> <p>1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i></p> <p>PT [(1x(2x60"))</p>	<p>TM [(1x(2x50")) Kegiatan:</p> <p>1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i></p> <p>Media:</p>	<p>Pokok Bahasan: Rangkaian Terdangeng Secara Magnetik ,Induktansi Timbal Balik, Aturan Tangan Kanan-Dot Energi Dalam Rangkaian Gandeng Maknetik. Kontanta Gandeng</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1. WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of 	5%

			4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i>	Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i> Moda (Learning Management System): learning@usu.ac.id	<i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i> Metode Pembelajaran: 28. <i>Online Lecture</i> 29. <i>Discussion</i> 30. <i>Self-Paced Learning</i>	Linier Electric Circuits, Brooks / Cole Thomson Learning. DLL	
14	Mahasiswa memahami perkembangan teori pembangkitan emf pada kumparan, hubungan sumber 3 fasa, hubungan sumber dengan beban, tiga fasa seimbang, beban tiga fasa tak seimbang, daya pada sistem tiga fasa	1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i>	Kriteria: <i>Marking Scheme</i> Bentuk: <i>Worksheet (Non-Tes)</i> 1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i>	BM [(1x(2x60")) Kegiatan: 1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i> PT [(1x(2x60"))	TM [(1x(2x50")) Kegiatan: 1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i> Media:	Pokok Bahasan: Pembangkitan Emf Pada Kumparan, Hubungan Sumber 3 Fasa, Hubungan Sumber Dengan Beban, Tiga Fasa Seimbang, Beban Tiga Fasa Tak Seimbang, Daya Pada Sistem Tiga Fasa Referensi: - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of	5%

			<p>4. <i>Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</i></p>	<p>Task 3: <i>Restating the information obtained in the form of an a-150-words paragraph.</i></p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p><i>Power Point Presentation (PPT)</i> <i>Zoom Meeting</i> <i>Audio Recording</i> <i>English Handout</i></p> <p>Metode Pembelajaran:</p> <ol style="list-style-type: none"> 31. <i>Online Lecture</i> 32. <i>Discussion</i> 33. <i>Self-Paced Learning</i> 	<p>Linier Electric Circuits, Brooks / Cole Thomson Learning. DLL</p>	
15	Mahasiswa memahami bentuk eksponensial deret fourier, respons steady state fungsi periodik, spektrum daya dari sinyal periodik.	<ol style="list-style-type: none"> 1. <i>The accuracy in providing the information required</i> 2. <i>The student's fluency in reading the memo (spelling, intonation, and speed)</i> 3. <i>The correctness of the student's answers</i> 	<p>Kriteria: <i>Marking Scheme</i></p> <p>Bentuk: <i>Worksheet (Non-Tes)</i></p> <ol style="list-style-type: none"> 1. <i>Reading the memo provided.</i> 2. <i>Responding to the opening questions given.</i> 3. <i>Completing the table (problem-solution) according to the information in the memo.</i> 	<p>BM [(1x(2x60"))] Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Reviewing the previous lessons.</i> 2. <i>Reading the added learning materials.</i> 3. <i>Recording the presence.</i> 4. <i>Responding to opening questions in the 'Discussion Forum' section.</i> 5. <i>Submitting the assigned tasks.</i> <p>PT [(1x(2x60"))]</p>	<p>TM [(1x(2x50"))] Kegiatan:</p> <ol style="list-style-type: none"> 1. <i>Making notes of the learning materials explained.</i> 2. <i>Responding to the questions or instructions given.</i> 3. <i>Completing all the provided exercises individually.</i> 4. <i>Discussing the exercises completed.</i> <p>Media:</p>	<p>Pokok Bahasan: Bentuk Eksponensial Deret Fourier, Respons Steady State Fungsi Periodik, Spektrum Daya Dari Sinyal Periodik.</p> <p>Referensi:</p> <ul style="list-style-type: none"> - 1WH. Hyat, JR., JE.Kemmerly, 1994, Rangkaian Listrik Jilid I, Penerbit Erlangga Jakarta. - Budiono Ismail, 1997, Rangkaian Listrik Jilid Pertama, Penerbit ITB Bandung. - Mohamad Ramdhani, 2008, Rangkaian Listrik, Penerbit Erlangga Jakarta. - Josep A. Edminister MSE, Theory and Problem of Electric Circuits, Schaum's Outline Series. Mc. Graw-Hill International Book Company. - A. Bruce Carlson, 2000, CIRCUITS-Engineering Concepts and Analysis of Linier Electric Circuits, Brooks / Cole Thomson Learning. 	5%

			<p>4. Finding the word or phrase with similar meaning (synonym) according to the information in the memo. Classifying the words or phrases with the correct headings.</p>	<p>Task 3: Restating the information obtained in the form of an a-150-words paragraph.</p> <p>Moda (Learning Management System): learning@usu.ac.id</p>	<p>Power Point Presentation (PPT) Zoom Meeting Audio Recording English Handout</p> <p>Metode Pembelajaran:</p> <p>34. Online Lecture 35. Discussion 36. Self-Paced Learning</p>	DLL	
16	UJIAN AKHIR SEMESTER						15 %
	Total						100