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|  | **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** | |
| Teknik Biomedik | | | TEE3218 |  | **2** |  |  | 7 AGUSTUS 2022 | |
| **OTORISASI / PENGESAHAN** | | | **Dosen Pengembang RPS** | | **Koordinator RMK** | | **Ka Prodi** | | |
| Dr. Fahmi, ST, MSc, IPM | |  | | 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 | menjelaskan prinsip dasar teknik biomedika, konsep multidisiplin dan etika teknik biomedika | | | | | | |
| CPMK 2 | menjelaskan dengan sistematis latar belakang, sejarah pertama digunakannya alat, fungsi alat, metode kerja alat, cara penggunaan alat, contoh-contoh penggunaan alat dalam mendeteksi atau mendiagnosa penyakit/kelainan serta mengetahui gambar alat untuk ala | | | | | | |
| CPMK 3 | menjelaskan dengan sistematis latar belakang, sejarah pertama digunakannya alat, fungsi alat, metode kerja alat, cara penggunaan alat, contoh-contoh penggunaan alat dalam mendeteksi atau mendiagnosa penyakit/kelainan serta mengetahui gambar alat untuk ala | | | | | | |
| CPMK 4 |  | | | | | | |
| **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 |  |  |  |  |  |  |  |  |  |  |  |  | | CPMK 2 |  | Mohon | diceklis | yang | sesuai |  |  |  |  |  |  |  | | CPMK 3 |  |  |  |  |  |  |  |  |  |  |  |  | | CPMK 4 |  |  |  |  |  |  |  |  |  |  |  |  | | | | | | | | |
| **Diskripsi Singkat MK** | | Mata kuliah ini merupakan mata kuliah pilihan yang bersifat multidisiplin untuk mahasiswa baik dari latar belakang kesehatan, keilmuan science dan teknologi. Dalam mata kuliah ini akan dibahas mengenai prinsip dasar teknik biomedika, konsep multidisiplin dan etika teknik biomedika. Serta juga akan dibahas konsep sinyal elektrik tubuh mulai dari latar belakang, sejarah alat, fungsi alat, metode kerja alat, cara penggunaan alat, contoh-contoh penggunaan alat dalam mendeteksi atau mendiagnosa penyakit/kelainan serta perekaman sinyal seperti: ECG, EEG, EMG, EOG, GSR dan lain sebagainya. Dibahas juga mengenai alat kesehatan diagnostik seperti : PPG, EBP, USG, CT Scan, MRI dan lainnya ditinjau dari sistematis latar belakang, sejarah pertama digunakannya alat, fungsi alat, metode kerja alat, cara penggunaan alat, contoh-contoh penggunaan alat dalam mendeteksi atau mendiagnosa penyakit/kelainan. Penekanan kuliah berbasis proyek dan multi-discpline team work. | | | | | | | |
| **Bahan Kajian:** Materi pembelajaran | | Penjelasan Kontak Kuliah dan Perkenalan; Dasar Teknik Biomedika; Pengenalan Alat dan Prinsip Kerja Electrocardiograf (Ekg); Analisa, Pembacaan dan Aplikasi Electrocardiograf (Ekg); Pengenalan Alat dan Prinsip Kerja Electroencephalograf (Eeg); Analisa, Pembacaan dan Aplikasi Electroencephalograf (Eeg); Pembahasan Alat Electromyograf (Emg); Electrooculograf; Galvanic Skin Responses; Electronic Blood Pressure; Ultrasonograf; Mahasiswa dapat mengerjakan latihan tentang ct scan; Mahasiswa memahami perkembangan teori magnetic resonance imaging; Mahasiswa memahami project gagasan kreatif dengan kelompok multidisiplin | | | | | | | |
| **Pustaka** | | **Utama:** |  | | | | | | |
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| **Pendukung:** |  | | | | | | |
| 1. | | | | | | | |
| **Dosen Pengampu** | |  | | | | | | | |
| **Matakuliah syarat** | |  | | | | | | | |

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| **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** |
| **(1)** | **(2)** | **(3)** | **(4)** | **Tatap Muka(5)** | **Daring (6)** | **(7)** | **(8)** |
| 1 | Mahasiswa menguasai teori penjelasan kontak kuliah dan perkenalan | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Penjelasan Kontak Kuliah dan Perkenalan  **Referensi:**  **Mohon diisikan** | 5% |
| 2 | Mahasiswa memahami dasar teknik biomedika | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Dasar Teknik Biomedika  **Referensi:** | 5% |
| 3 | Mahasiswa menguasai pengenalan alat dan prinsip kerja electrocardiograf (ekg) | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Pengenalan Alat dan Prinsip Kerja Electrocardiograf (Ekg)  **Referensi:** | 5% |
| 4 | Mahasiswa mampu menerapkan teori analisa, pembacaan dan aplikasi electrocardiograf (ekg) | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Analisa, Pembacaan dan Aplikasi Electrocardiograf (Ekg)  **Referensi:** | 5% |
| 5 | Mahasiswa dapat mengerjakan latihan tentang pengenalan alat dan prinsip kerja electroencephalograf (eeg) | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Pengenalan Alat dan Prinsip Kerja Electroencephalograf (Eeg)  **Referensi:** | 5% |
| 6 | Mahasiswa memahami perkembangan teori analisa, pembacaan dan aplikasi electroencephalograf (eeg) | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Mahasiswa memahami perkembangan teori analisa, pembacaan dan aplikasi electroencephalograf (eeg)  **Referensi:** | 5% |
| 7 | Mahasiswa dapat mempresentasikan pengetahuan pembahasan alat electromyograf (emg) | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Pembahasan Alat Electromyograf (Emg)  **Referensi:** | 5% |
| 8 | UJIAN TENGAH SEMESTER |  |  |  |  |  |  |
| 9 | Mahasiswa menguasai teori electrooculograf | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Electrooculograf  **Referensi:** | 5% |
| 10 | Mahasiswa memahami galvanic skin responses | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Galvanic Skin Responses  **Referensi:** | 5% |
| 11 | Mahasiswa menguasai electronic blood pressure | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Electronic Blood Pressure  **Referensi:** | 5% |
| 12 | Mahasiswa mampu menerapkan teori ultrasonograf | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Ultrasonograf  **Referensi:** | 5% |
| 13 | Mahasiswa dapat mengerjakan latihan tentang ct scan | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Ct Scan  **Referensi:** | 5% |
| 14 | Mahasiswa memahami perkembangan teori magnetic resonance imaging | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Magnetic Resonance Imaging  **Referensi:** | 5% |
| 15 | Mahasiswa memahami project gagasan kreatif dengan kelompok multidisiplin | 1. *The accuracy in providing the information required* 2. *The student’s fluency in reading the memo (spelling, intonation, and speed)* 3. *The correctness of the student’s answers* | **Kriteria:**  *Marking Scheme*  **Bentuk:**  *Worksheet* (Non-Tes)   1. *Reading the memo provided.* 2. *Responding to the opening questions given.* 3. *Completing the table (problem-solution) according to the information in the memo.* 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.* | BM [(1x(2x60”)]  **Kegiatan:**   1. *Reviewing the previous lessons.* 2. *Reading the added learning materials.* 3. *Recording the presence.* 4. *Responding to opening questions in the ‘Discussion Forum’ section.* 5. *Submitting the assigned tasks.*   PT [(1x(2x60”)]  **Task 3:**  *Restating the information obtained in the form of an a-150-words paragraph.*  **Moda (*Learning Management System*):**  [elearning@usu.ac.id](mailto:elearning@usu.ac.id) | TM [(1x(2x50”)]  **Kegiatan:**   1. *Making notes of the learning materials explained.* 2. *Responding to the questions or instructions given.* 3. *Completing all the provided exercises individually.* 4. *Discussing the exercises completed.*   **Media:**  *Power Point Presentation (PPT)*  *Zoom Meeting*  *Audio Recording*  *English Handout*  **Metode Pembelajaran:**   1. *Online Lecture* 2. *Discussion* 3. *Self-Paced*   *Learning* | **Pokok Bahasan:**  Project Gagasan Kreatif Dengan Kelompok Multidisiplin  **Referensi:** | 5% |
| 16 | UJIAN AKHIR SEMESTER |  |  |  |  |  |  |
|  | Total | | | | | | **100** |