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|  | | **STATE UNIVERSITY OF PADANG**  **FACULTY OF ENGINEERING**  **ELECTRONIC ENGINEERING DEPARTMENT** | | | | | | | | | | | **Document Code** | | |
| **SEMESTER LEARNING PLAN** | | | | | | | | | | | | | | | |
| **COURSES** | | | | | | **CODE** | | **Course Clumps** | | **Credits** | | **SEMESTER** | | **Compilation Date** | |
| **Computer Electronics** | | | | | | TIK. 1.61.1307 | | Study Program Compulsory Courses | | 3 credits (theory) | | 1 | | July 2017 | |
| **AUTHORIZATION** | | | | | | **RPS Developer Lecturer** | | | | **RMK Coordinator** | | **Head of PRODI** | | | |
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| **Learning Outcomes (CP)** | | | **CPL-PRODI** | | |  | | | | | | | | | |
| CP - S1 | Believe in God Almighty and be able to show a religious attitude | | | | | | | | | | | |
| CP - S9 | Demonstrate an attitude of responsibility for work in their field of expertise independently | | | | | | | | | | | |
| CP - PP6 | Understand the basic concepts of mathematics, electrical and electronic science in the field of computers | | | | | | | | | | | |
| CP - KU5 | able to make decisions appropriately in the context of problem-solving in their area of expertise, based on the results of information and data analysis. | | | | | | | | | | | |
| CP - KK6 | Ability to master basic mathematics, electrical and electronic science concepts for the development of computer systems | | | | | | | | | | | |
| **CPMK** | | | |  | | | | | | | | |
| CPMK1 | Able to explain the basics of electronics | | | | | | | | | | | |
| CPMK2 | Able to explain electronic components and their functions | | | | | | | | | | | |
| CPMK3 | Able to explain number system | | | | | | | | | | | |
| CPMK4 | Able to convert number systems | | | | | | | | | | | |
| CPMK5 | Able to explain series and parallel electronic circuits | | | | | | | | | | | |
|  | | | CPMK6 | Be able to explain ohms law and the concept of voltage, current and electric power | | | | | | | | | | | |
| **Short Description MK** | | | The Computer Electronics course material will provide students with an overview and basic knowledge on how to recognize basic electronics components, basic electronic circuits, introduction to digital systems, and basic introduction to computers (Hardware and Software). | | | | | | | | | | | | |
| **Study Materials (Learning materials)** | | | 1. basic components of electronics 2. number conversion 3. electronic circuits 4. Ohm's law 5. Hardware (Hardware) 6. software (Software) | | | | | | | | | | | | |
| **References** | | | **Main:** | | |  | | | | | | | | | |
| 1. Elektronika Komputer Digital - Albert Paul Malvino. Alih Bahasa : Tjia May On. Penerbit : Erlangga. Cetakan 1993 2. Buku rangkaian listrik karangan william h. Hayt, jr | | | | | | | | | | | | |
| **Supporters:** | | |  | | | | | | | | | |
| 1. Other books that can support Computer Electronics lectures 2. Sites/websites that can help the smooth running of Computer Electronics courses | | | | | | | | | | | | |
| **Learning Media** | | | **Software:** | | | | | | | **Hardware :** | | | | | |
| MS Office, EWB applications | | | | | | | LCD & Projector | | | | | |
| **Supporting lecturer** | | | **Zulwisli, S.Pd., M.Eng** | | | | | | | | | | | | |
| **Requirements course** | | | - | | | | | | | | | | | | |
| **Mg To-** | **Sub-CPMK**  **(as the final expected ability)** | | | | **Assessment Indicators** | | | **Criteria & Form of Assessment** | **Forms, Learning Methods & Assignments**  **[ Estimated time]** | | **Learning materials**  **[Library / Learning Resources]** | | | | **Rating Weight (%)** |
| **(1)** | **(2)** | | | | **(3)** | | | **(4)** | **(5)** | | **(6)** | | | | **(7)** |
| 1 | Able to understand the meaning of electronics  Able to understand the basics of electronics | | | | 1. The accuracy in explaining the basics of electronic components | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * **Lectures:**   Presentation  **[TM: 1x (3x50 ”)]**   * **Independent:**   **[BM: 1x (3x60 ”)]**  • **Task 1**: summary of material about the basics of electronic components  **[BT: 1x (3x60 ")]** | | * Basics of Electronic Components * Understanding Electronics * Electronics Basics [1,2,3,4,5] | | | | **5%** |
| 2 | 1. Able to explain electronic components. 2. Able to understand the function of each electronic component | | | | 1. Accuracy in explaining electronic components and their functions | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 1x (3x50 ”)]**   * **Independent:**   **[BM: 1x (3x60 ”)]**  • **Task-2**: paper on the identification of electronic components  **[BT: 1x (3x60 ")]** | | * Electronic Components * The function of each electronic component   [1,2,3,4,5] | | | | **5%** |
| 3 | Able to understand the basic concepts of number systems | | | | 1. The accuracy in explaining decimal numbers 2. Accuracy describes a decimal octal number to binary 3. Describes a decimal to binary hex number | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 1x (3x50 ”)]**   * **Independent:**   **[BM: 1x (3x60 ”)]**  • **Task-3**: a summary of the number system  **[BT: 1x (3x60 ")]** | | * Decimal Number * Binary * Okta Decimal * HexaDesimal   [1,2,3,4,5] | | | | **5%** |
| 4 | Able to understand Number System Conversion | | | | 1. The statute describes the conversion of a decimal number to binary 2. The accuracy describes the conversion of binary numbers to decimal 3. The accuracy of executing the conversion of decimal octal numbers to binary 4. Perform the conversion of hex decimal numbers to binary | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 1x (3x50 ”)]**   * **Independent:**   **[BM: 1x (3x60 ”)]**  • **Task-4**: calculation of number system conversion  **[BM: 1x (3x60 ”)]** | | * Decimal to Binary Numbers * Binary to Decimal * Octal Decimal to Binary * HexaDesimal To Binary   [1,2,3,4,5] | | | | **10%** |
| 5 | Able to understand series and parallel electronic circuits | | | | 1. Accuracy in understanding and understanding series and parallel circuits 2. Accuracy in calculating series 3. Accuracy in calculating parallel circuits 4. Accuracy in mixed circuit calculations | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 1x (3x50 ”)]**   * **Independent:**   **[BM: 1x (3x60 ”)]**  • **Task-5**: complete the calculation of series and parallel circuits  **[BT: 1x (3x60 ")]** | | * Series series * Parallel circuit   [1,2,3,4,5] | | | | **10%** |
| 6-7 | Able to understand the basic concepts of ohm law | | | | 1. Accuracy in explaining the concept of stress 2. Accuracy explains the concept of flow 3. Accuracy describes electrical power | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 2x (3x50 ")]**   * **Independent:**   **[BM: 2x (3x60 ")]**  • **Task-6**: perform calculations of voltage, electric current and electric power  **[BT: 2x (3x60 ")]** | | * Voltage * Electric current * Electrical power [1,2,3,4,5] | | | | **10%** |
| 8 | **Mid Semester Exam (UTS)** | | | | | | | | | | | | | |  |
| 9-10 | Able to make series and parallel electronic circuits using the Electronic Work Bench (EWB) application.  Able to make mixed electronic circuits using the Electronic Work Bench (EWB) application | | | | 1. The accuracy in making electronic circuits using EWB | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 2x (3x50 ")]**   * **Independent:**   **[BM: 2x (3x60 ")]**  • **Task-7**: create an electronic circuit using the EWB  **[BT: 2x (3x60 ")]** | | Electronics Circuit in EWB Application Software  [1,2,3,4,5] | | | | **15%** |
| 11 | Able to explain computer hardware and its functions | | | | 1. Accuracy in explaining computer hardware 2. Accuracy in explaining the functions and uses of computer hardware | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 1x (3x50 ”)]**   * **Independent:**   **[BM: 1x (3x60 ”)]**  • **Task-8**: describes the functions of computer hardware  **[BT: 1x (3x60 ")]** | | * Computer hardware * Functions and uses of computer hardware   [1,2,3,4,5] | | | | **10%** |
| 12-13 | Able to solve troubleshooting on the computer and how to solve it | | | | 1. Accuracy in identifying troubleshooting on a computer 2. Accuracy in overcoming problems with troubleshooting computers | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 2x (3x50 ")]**   * **Independent:**   **[BM: 2x (3x60 ")]**  • **Task-9**: identify computer troubleshooting  **[BM: 2x (3x60 ")]** | | * Trouble Shooting * Hardware Damage Detection * How to Overcome Hardware Damage   [1,2,3,4,5] | | | | **15%** |
| 14-15 | Able to understand the operating system and install OS and applications in a virtual box (VB) | | | | 1. Accuracy in understanding the installation of an operating system with a virtual box 2. The accuracy in installing the operating system 3. The accuracy in installing application programs | | | 1. Assignments / Exercises 2. Midterm exam 3. Final exams | * Lectures:   Presentation  **[TM: 2x (3x50 ")]**   * **Independent:**   **[BM: 2x (3x60 ")]**  • **Task-9**: operating system installation with virtual box  **[BM: 2x (3x60 ")]** | | * Introduction to the operating system * Virtual box application * Operating system installation * Installation of application programs   [1,2,3,4,5] | | | | **15%** |
| 16 | **Final exams** | | | | | | | | | | | | | |  |