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|  | | **UNIVERSITAS NEGERI PADANG**  **FACULTY OF ENGINEERING**  **ELECTRONICS DEPARTMENT**  **INFORMATICS EDUCATION STUDY PROGRAM** | | | | | | | | | | | **Document Code** | | |
| **SEMESTER LEARNING PLAN (SLP)** | | | | | | | | | | | | | | | |
| **COURSES** | | | | | | **CODE** | | **Course Group** | | **Credit Points** | | **SEMESTER** | | **Date Of Creation** | |
| **Praktikum Algoritma Pemrograman**  **(Practicum of Algorithm and Programming)** | | | | | | TIK.61.1306 | | Study Program Compulsory Courses | | 2 credits (practicum) | | I | | 30 July 2017 | |
| **AUTHORIZATION** | | | | | | **Lecturer** | | | | **Course Coordinator** | | **Coordinator of Study Program** | | | |
|  | | | |  | | **Ahmaddul Hadi, S.Pd., M.Kom.**  **NIP. 197612092005011003** | | | |
| **Learning Outcomes (LO)** | | | **PLO** | | |  | | | | | | | | | |
| PLO-S1 | Have faith in God Almighty and able to show a religious attitude. | | | | | | | | | | | |
| PLO-S9 | Demonstrate an attitude of responsibility for work in their field of expertise independently | | | | | | | | | | | |
| PLO-P5 | Mastering basic science concepts in the field of Informatics Engineering | | | | | | | | | | | |
| PLO-KU5 | Able to make correct decisions in the context of problem solving through algorithms and programming | | | | | | | | | | | |
| PLO-KK5 | The ability to apply basic science, especially regarding basic programming in the field of Informatics Engineering | | | | | | | | | | | |
| **CO** | | | |  | | | | | | | | |
| CO-1 | Mastering the abstraction of the execution of a program on a computer system | | | | | | | | | | | |
| CO-2 | Students can understand, describe, and implement algorithmic concepts and basic programming using the C language to solve a particular problem or case using an IDE. | | | | | | | | | | | |
| **Course Description** | | | This course studies and implements the concepts of algorithms and basic programming using the C language. The course material consists of introduction to algorithms, C programming, and the use of IDE, making flowcharts, pseudocode, C Basic Syntax, Data Types, Variables, Constants, Keywords, C Input & Output, Type Casting, C Operators & Comments, C Decision Making, C Loops, C Arrays & Strings, C Functions, C Structures & Typedef (ADT), Array of Structures, & Nested Structures, C Pointers, C Unions, C Files Handling in programming to solve a particular problem. | | | | | | | | | | | | |
| **Course Matter** | | | Meeting 1: Introduction: Algorithms, C Programming, and IDEs.  Meeting 2: C Basic Syntax, Data Types, Variables, Constants, Keywords  Meeting 3: C Input & Output, Type Casting  Meeting 4: C Operators & Comments  Meeting 5: C Decision Making  Meeting 6: C Loops  Meeting 7: QUIZ # 1  Meeting 8: UTS: Mid Test  Meeting 9: C Arrays & Strings  Meeting 10: C Functions  Meeting 11: C Structures & Typefs, Array of Structures, & Nested Structures  Meeting 12: C Pointers  Meeting 13: C Unions  Meeting 14: C File Handling  Meeting 15: QUIZ # 2  Meeting 16: UAS: Final Test | | | | | | | | | | | | |
| **References** | | | **Main:** | | |  | | | | | | | | | |
| 1. Kernighan, Brian W, & Ritchie, Dennis M. 1988. The Ansi C Programming Language Second Edition, Prentice-Hall. 2. Cipta Ramadhani. 2015. Dasar Algoritma & Struktur Data dengan Bahasa Java. Yogyakarta: ANDI. | | | | | | | | | | | | |
| **Supporting:** | | |  | | | | | | | | | |
| 1. Books, journals and internet references | | | | | | | | | | | | |
| **Media** | | | **Software:** | | | | | | | **Hardware :** | | | | | |
| Turbo C | | | | | | | LCD & Projector | | | | | |
| **Supporting lecturer** | | |  | | | | | | | | | | | | |
| **Prerequisites** | | | - | | | | | | | | | | | | |
| **Weeks-** | **Sub-CO**  **(Expected Final Ability in each learning stage)** | | | | **Assessment Indicator** | | | **Assessment Criteria** | **Learning Method, Students’ Learning Experience**  **[Time Allocation]** | | **Learning Material [Topic from Reference]** | | | | **Score (%)** |
| **(1)** | **(2)** | | | | **(3)** | | | **(4)** | **(5)** | | **(6)** | | | | **(7)** |
| 1-2 | Introduction: Introduction to Algorithms, C Programming, and IDEs. | | | | 1. Accuracy correctly describes the algorithm and how it works 2. Accuracy in correctly explaining the Post language 3. The accuracy of doing 4. Practicum is correctly regarded the use of the C language, how to compile and run | | | 1. Work attitude 2. Systematics 3. Process 4. Progress | * Lectures:   Guided practicum  **[TM: 2x (2x50 ")]**  • **Task 1**: Programming algorithm  **[BT + BM: (2 + 2) x (2x60 ”)]** | | Understanding Algorithms, Introduction to the DevC ++ IDE [1,2,3,4,5,6,7] | | | | **5%** |
| 3-4 | C Basic Syntax, Data Types, Variables, Constants, Keywords, C Input & Output, Type Casting | | | | 1. Accuracy Correctly run practicum types of primitive and formations in C 2. Accuracy run with   Correct practicum according to instructions and outputs   1. Accuracy correctly describes expressions and operators 2. The accuracy of making programs correctly and executable | | | 1. Work attitude 2. Systematics 3. Process 4. Progress | * Lectures:   Presentation  **[TM: 2x (1x50 ")]**  • **Task-2**: describes various record variables  **[BT + BM: (1 + 1) x (1x60 ”)]** | | Variables, Input / Output, assignment, Data Types, Expressions and Operators [1,2,3,4,5,6,7] | | | | **5%** |
| 5-6 | Branching on writing  algorithm | | | | 1. Accuracy correctly describes the essence of using branching in C. 2. Accuracy describes the general form of the branching. 3. Accuracy solves simple problems with C branching | | | 1. Work attitude 2. Systematics 3. Process 4. Progress | * Lectures:   Presentation  **[TM: 2x (2x50 ")]**  • **Task-3**: branching in C  **[BT + BM: (2 + 2) x (2x60 ”)]** | | Describe if - then, case of [1,2,3,4,5,6,7] | | | | **15%** |
| 7-8 | Functions and procedures in writing the algorithm C | | | | 1. The accuracy of carrying out the practicum correctly related to the use of functions and procedures in C. 2. Accuracy Correctly describes the general form of functions and procedures 3. Accuracy solves the simple problem of C-branching | | | 1. Assignments / Exercises 2. Midterm exam | * Lectures:   Presentation  **[TM: 2x (1x50 ")]**  • **Task-4**: a matter of decision making  **[BT + BM: (1 + 1) x (1x60 ”)]** | | Explain the understanding of functions, programming procedures  [1,2,3,4,5,6,7] | | | | **15%** |
| 9-10 | Understand  iteration in writing algorithm C | | | | 1. The accuracy of carrying out practicum related to looping 2. Determined to choose the correct looping method 3. Correctly practicing accuracy is a simple problem with the C loop | | | 1. Work attitude 2. Systematics 3. Process 4. Progress | * Lectures:   Presentation  **[TM: 2x (1x50 ")]**  • **Task-5**: looping case  **[BT + BM: (1 + 1) x (1x60 ”)]** | | Explain the definition of loop for loop while - do loop repeat - until [1,2,3,4,5,6,7] | | | | **15%** |
| 11-12 | Understand procedural programming | | | | 1. Explain correctly the meaning of sequential, sequential items, empty case, mark 2. Properly describes how empty cases are handled 3. Explain properly 4. Recurring relationships and studies 5. The case is simple with a C loop | | | 1. Work attitude 2. Systematics 3. Process 4. Progress | * Lectures:   Presentation  **[TM: 2x (2x50 ")]**  • **Task-6**: procedural programming  **[BT + BM: (2 + 2) x (2x60 ”)]** | | Explain the notion of procedural programming [1,2,3,4,5,6,7] | | | | **20%** |
| 10 | **MIDTERM EXAM** | | | | | | | | | | | | | |  |
| 13-14 | Understand table (array) creation | | | | 1. Punctuality Correctly describes the definition, declaration of table / array type and know the usage of that type / array 2. Accuracy Perform proper practice regarding tables with functions and procedures 3. Accuracy of Practicing and 4. Correctly implements any searching scheme 5. Accuracy Correctly writes program code for all sorting schemes with various types of data (integer and string) | | | 1. Assignments / Exercises | * Lectures:   Presentation  **[TM: 2x (2x50 ")]**  • **Task-7**: use of arrays in programming  **[BT + BM: (2 + 2) x (2x60 ”)]** | | Describe the form and properties of Arrays []  [1,2,3,4,5,6,7] | | | | **10** |
| 15 | Understand making searching and sorting | | | | Accuracy to properly practice searching and sorting | | | 1. Assignments / Exercises | * Lectures:   Presentation  **[TM: 2x (2x50 ")]**  • **Task-7**: completion of calculations about the number of turns, voltage and current of the transformer  **[BT + BM: (2 + 2) x (2x60 ”)]** | | Explain Searching, Sorting [1,2,3,4,5,6,7] | | | | **10%** |
| 16 | *C Structures & Typedef (ADT), Array of Structures, & Nested Structures* | | | | 1. Accuracy explains about *C Structures & Typedef (ADT), Array of Structures, & Nested Structures in C programming using IDE.* 2. Accuracy describes correctly regarding *C Structures & Typedef (ADT), Array of Structures, & Nested Structures in C programming using IDE.* 3. Accuracy explains correctly regarding *C Structures & Typedef (ADT), Array of Structures, & Nested Structures in C programming using IDE.* | | | 1. Assignments / Exercises | * Lectures:   Presentation  **[TM: 2x (1x50 ")]**  • **Task-7**: use structures and typedefs  **[BT + BM: (1 + 1) x (1x60 ”)]** | | Explain the use of structures and typedefs  [1,2,3,4,5,6,7] | | | | **5%** |
| 16 | **SEMSTER END EXAM (UAS)** | | | | | | | | | | | | | |  |