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|  | | **UNIVERSITAS NEGERI PADANG**  **FAKULTAS TEKNIK**  **JURUSAN TEKNI ELEKTRONIKA** | | | | | | | | | | | **Document Code** | | |
| **SEMESTER LEARNING PLAN** | | | | | | | | | | | | | | | |
| **COURSES** | | | | | | **CODE** | | **Field Course** | | **Credits** | | **SEMESTER** | | **Compilation Date** | |
| **Object-Oriented Programming** | | | | | | TIK1.61.3301 | | Study Program Compulsory Courses | | 3 SKS (Theory) | | 3 | | Juli 2017 | |
| **AUTHORIZATION** | | | | | | **Dosen Pengembang RPS** | | | | **Koordinator RMK** | | **Ka 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 python programming, Gauss computation method, and LU Decomposition method computation | | | | | | | | | | | |
| **CPMK** | | | |  | | | | | | | | |
| CPMK1 | describes Java (JDK, JRE, JVM), OOP, IDE | | | | | | | | | | | |
| CPMK2 | describes the basic syntax of Java programming | | | | | | | | | | | |
| CPMK3 | Understand, describe, implement Java Variables & Data Types | | | | | | | | | | | |
| CPMK4 | implement Java Operators | | | | | | | | | | | |
| CPMK5 | understand the application of Java Decision Making | | | | | | | | | | | |
| CPMK6 | implementing the Java Loop | | | | | | | | | | | |
| CPMK7 | Implementing Java Array & String | | | | | | | | | | | |
| **Short Course Description** | | | This course learns about the concept of Object-Oriented Programming (OOP) and its application in a programming language problem. This course learns about Java Programming, OOP, IDE, and Installation, Java Basic Syntax, Java Variables & Data Types, Java Operators, Java Decision Making, Java Loop, Java Array & Strings, Java Class & Object, Java Function & Methods, Inheritance, Polymorphism, Abstraction, Encapsulation. | | | | | | | | | | | | |
| **Study Materials (Learning materials)** | | | 1. Java programming,  2. OOP,  3. IDE, and Installation,  4. Basic Java Syntax,  5. Java Variables & Data Types,  6. Java Operators,  7. Javanese Decision Making,  8. Java Loops, Java Arrays & Strings,  9. Java Classes & Objects,  10. Java Functions & Methods,  11. Inheritance,  12. Polymorphism,  13. Abstraction,  14. Encapsulation. | | | | | | | | | | | | |
| **References** | | | **Utama:** | | |  | | | | | | | | | |
| 1. Cipta Ramadhani. 2015. Dasar Algoritma & Struktur Data dengan Bahasa Java. Yogyakarta: ANDI. 2. Denny Kurniadi. 2017. Pemrograman Berorientasi Objek dengan Bahasa Pemrograman Java. Padang: UNP. | | | | | | | | | | | | |
| **Pendukung:** | | |  | | | | | | | | | |
| 1. Wu, C. Thomas. 2010. *An Introduction to Object–Oriented Programming with Java 5th Edition.* C. USA: McGraw – Hill Education. 2. Nemeyer, Patrick and Luck, *Daniel.* 2013. *Learning Java 4th Edition*.O’Reilly 3. Sharan, Kishori. 2014. *Beginning Java 8 Fundamentals*. Apress. Schildt, Herbert. 2014. *Java: The Complete Reference 9th Edition*. McGraw – Hill Education. | | | | | | | | | | | | |
| **Learning Media** | | | **Perangkat lunak:** | | | | | | | **Perangkat keras :** | | | | | |
| Netbeans IDE, ppt, word app | | | | | | | LCD & Projector | | | | | |
| **Supporting lecturer** | | | Agariadne DS, S.Pd., M.Pd.T | | | | | | | | | | | | |
| **Subject requirements** | | | - | | | | | | | | | | | | |
| **Weeks** | **Sub-CPMK**  **(as the final expected ability)** | | | | **Assessment Indicators** | | | **Criteria and Forms of Assessment** | **Forms, Learning Methods & Assignments**  **[ Estimated time]** | | **Learning materials**  **[Library / Learning Resources]** | | | | **Bobot Penilaian (%)** |
| **(1)** | **(2)** | | | | **(3)** | | | **(4)** | **(5)** | | **(6)** | | | | **(7)** |
| 1-2 | students can describe Java (JDK, JRE, JVM), OOP, IDE, and install and configure Java and IDE, then create, compile, run, analyze errors from a simple Java program using the IDE. | | | | Accuracy explains the introduction of OOP, Java: JDK, JRE, JVM, IDE, and Installation. | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 2x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 2x(3x70 Menit)** | | 1. Introduction and Lecture Contract 2. Introduction to OOP, Java: JDK, JRE, JVM, IDE, and Installation. | | | | **5%** |
| 3 | Students can describe the basic syntax of Java programming using an IDE. | | | | Accuracy of explaining Basic Java Syntax | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM: 1x(3x 100 Menit)**   1. Structured Assignments   **BM+BT : 1 x(3x70 Menit)** | | Java Basic Syntax | | | | **5%** |
| 4 | Students can describe, apply Java Variables & Data Type in programming to solve certain problems with Java programming using an IDE | | | | * Accuracy of describing Java Variables * Accuracy of describing data types | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM: 1x(3x 100 Menit)**   1. Structured Assignments   **BM+BT : 1 x(3x70 Menit)** | | 1. *Java Variables & Data Types* | | | | **5%** |
| 5 | Students can describe, apply Java Operators in algorithms to solve problems with Java programming using an IDE | | | | Accuracy of describing Java Operators | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | 1. *Java Operators* | | | | **5%** |
| 6 | Students can describe, apply Java Decision Making in programming to solve problems with Java programming using an IDE | | | | Accuracy in explaining Java Decision Making | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | *Java Decision Making* | | | | **5%** |
| 7 | Students can describe, apply the Java Loop in programming algorithms to solve problems with Java programming using an IDE | | | | Accuracy describes the Java Loop | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM: 1x(3x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | *Java Loop* | | | | **5%** |
| **8** | **Mid-Term Exam: Formative evaluation that is intended to improve the learning process based on the assessment that has been carried out** | | | | | | | | | | | | | |  |
| 9 | Students can describe, apply Java Array & String in programming algorithms to solve certain problems with Java programming using an IDE. | | | | Accuracy of describing Java Array & String | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | *Java Array & String* | | | | **10%** |
| 10 | Students can describe, apply Java Class & Object in programming algorithms to solve certain problems with Java programming using an IDE. | | | | Accuracy of describing Java Classes & Objects | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM: 1x(3x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | 1. *Java Class & Object* | | | | **10%** |
| 11 | Students can describe, apply Java Functions & Methods in programming algorithms to solve certain problems with Java programming using an IDE. | | | | Accuracy of explaining Java Functions & Methods | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | 1. *Java Function & Method* | | | | **10%** |
| 12 | Students can describe, apply Inheritance in programming algorithms to solve certain problems with Java programming using an IDE. | | | | Accuracy describes Inheritance | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | *Inheritance* | | | | **10%** |
| 13 | Students can describe and apply Polymorphism in Java programming using an IDE. | | | | Accuracy explains Polymorphism | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1 x(3x70 Menit)** | | *Polymorphism* | | | | **10%** |
| 14 | Students can describe and apply Abstraction in Java programming using an IDE. | | | | Accuracy explains Abstraction | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1 x(3x70 Menit)** | | *Abstraction* | | | | **10%** |
| 15 | Students can describe and apply Encapsulation in Java programming using an IDE. | | | | Accuracy describes Encapsulation | | | Using the Assessment Rubric | 1. Presentation 2. online learning 3. Practice   **TM : 1x(3 x 100 Menit)**   1. Structured Assignments   **BM+BT : 1x(3x70 Menit)** | | *Encapsulation* | | | | **10%** |
| **16** | **Semester Final Examination: Evaluation that can see the final achievement of student learning outcomes** | | | | | | | | | | | | | |  |