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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** |
| **Agariadne DS, S.Pd., M.Pd.T****NIP. 19930822 201903 100 8** | **Thamrin, M.T.****NIP. 19770101 200812 100 1** | **Ahmaddul Hadi, M.Kom****NIP. 19761209 200501 100 3** |
| **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.
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| **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.
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| **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** |  |