Department of Mathematics
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Course	**Course Name**	**: Algorithm and Programming**
	Course Code	**: KM184202**
	Credit	**: 4**
	Semester	**: 2**

Description of Course

Algorithms and programming is course that discuss the basic concepts of algorithms and procedural programming. The concepts of algorithm and programming is implemented in JAVA programming language and will be used to solve simple problems. The topic include: basic algorithms, data types, variables, I/O structures, operators, loops, control structures, functions and procedures, array, string manipulation, recursive, GUI and event driven. The teaching system include tutorials, responses and scheduled workshops.

Learning Outcome

PLO 1	[C2] Students are able to identify and explain foundations of mathematics that include pure, applied, and the basic of computing
PLO 2	[C3] Students are able to solve simple and practical problems by applying basic mathematical statements, methods and computations

Course Learning Outcome

1. Be able to understand the basic concepts of algorithms and procedural computer programming.
2. Be able to design algorithms, flow charts, and create computer programs with JAVA language programming to solve mathematical problems, individually or togetherly.

Main Subject

1. Algorithms: definition, criteria, flow chart, pseudo-code
2. Programming Concepts: paradigms, structured programming steps, programming languages
3. Java Programming Language: data types, keywords, constants, variables, I/O structures, operators, loops, control structures, functions and procedures, array, string manipulation, recursive, GUI and event driven.

Prerequisites

Reference

1. Java Programming Comprehensive, 10th edition, Pearson Education, Inc., publishing as Prentice Hall, 2013
2. Paul Deitel, Harvey Deitel, Java: How to Program, 9th edition, Prentice Hall, 2012

Supporting Reference

1. Abdul Kadir, "Algoritma & Pemrograman Menggunakan Java", Andi Offset, 2012