

## SYLLABUS CURRICULUM

<b>COURSE</b>	<b>Course Name : MATHEMATIC I</b>
	<b>Course Code : KM184101</b>
	<b>Credit : 3 sks</b>
	<b>Semester : I</b>

### COURSE DESCRIPTION

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### LEARNING OUTCOMES

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LO5	Understand the basic science and mathematics.
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### COURSE LEARNING OUTCOMES

Students are able to explain real function concepts, limits, differentiation, integration, and also solve related problems.

### MAIN SUBJECT

The focus of this course are as follows:

- **Basic Concept real number:** definition of absolute value, inequalities, line, distance between two point, circle, parabolic
- **Concept of function, limit:** Domain, range, linear function, quadratic, and trigonometric, graph of function, limit function and continuous function.
- **Differentiation:** definition of differentiation, differentiation rules, the chain rule and differentiation of implicit function.
- **Application of differentiation:** related rates, up/down interval, concavity curve, draw a graph that has asymptote, maximum/minimum, approximation, extreme value, and another applications.
- **Indefinite integral and definite integral:** definition of integral, infinite limits, Riemann equation, plane surface area, fundamental theorem of calculus.

### PREREQUISITES

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### REFERENCE

1. Tim Dosen Jurusan Matematika ITS,"Buku Ajar Kalkulus I" Edisi ke-4 Jurusan Matematika ITS, 2012
2. Anton, H. dkk, *Calculus*, 10-th edition, John Wiley & Sons, New York, 2012
3. Kreyzig, E, *Advanced Engineering Mathematics*, 10-th edition, John Wiley & Sons, Singapore, 2011
4. Purcell, J, E, Rigdon, S., E., *Calculus*, 9-th edition, Prentice-Hall, New Jersey, 2006

5. James Stewart , Calculus, ed.7, Brooks/cole, 2012