

Course	Course Name	:	Mathematics 2
	Course Code	:	MK18 4 201
	Credit	:	3
	Semester	:	2 (two)

COURSE DESCRIPTION

In this course, students will learn the following subjects:

1. Transcendents functions, differential and integral
2. Integration technique and improper integral
3. Applying certain integral to a plane area, the volume of area revolution, arc length and the area of a surface of revolution., centroids and application of Guldin's theorem
4. Polar coordinate system and parametric equation, the polar coordinate's graph, and its application
5. Convergence of sequences and infinite series, sums of infinite series, Taylor and Maclaurin series

COURSE GRADUATE LEARNING OUTCOME

1. Students are able to interpret basic mathematical concepts and arrange the proofs directly, indirectly, or using mathematical induction
2. Students are able to identify simple problems, form mathematical models and solve them.
3. Students are able to understand the basic methods in mathematics
4. Students are able to understand the basic mathematical theories such as set theory, functions, differential, integral, space and mathematical structure
5. Students are able to identify problems, create mathematical models and solve them

COURSE LEARNING OUTCOME

1. Students are able to apply basic mathematical concepts related to transcendent functions
2. Students are able to apply integration techniques
3. Students are able to apply integration techniques well in the forms of cartesian coordinate functions, polar coordinate, and parametric equations
4. Students are able to determine the convergence of sequences, infinity series, and the number of convergent infinity series
5. Students are able to transform function to Taylor series or Maclaurin series

TOPIC

1. Transcendent functions, differential, and integral
2. Integration technique, Improper integral
3. Integral application
4. Polar coordinates, parametric functions, differential and its integral
5. Sequence and series

REFERENCES

Main Reference :

1. . Tim Dosen Jurusan Matematika ITS, Diktat Matematika 1 , Edisi ke-5 Jurusan Matematika ITS, 2020
2. Anton, H. dkk, Calculus, 10-th edition, John Wiley & Sons, New York, 2012

Supporting References :

1. Kreyzig, E, Advanced Engineering Mathematics, 10-th edition, John Wiley & Sons, Singapore, 2011
2. Purcell, J, E, Rigdon, S., E., Calculus, 9-th edition, Prentice-Hall, New Jersey, 2006
3. James Stewart , Calculus, ed.7, Brooks/cole-Cengage Learning, Canada,2012

GLOBAL LEARNING PROGRAM

