Course number	U-LAS10 10031 LE55		
Course title (and course title in English)	Calculus-E2 [For non-science majors] Calculus-E2 [For non-science majors]	Instructor's name, job title, and department of affiliation	Graduate School of Engineering Senior Lecturer,Arseniy Aleksandrovich, Kuzmin

Group	Natural Sciences	Field(Classification)	Mathematics(Foundations)

Language of instruction	English	Old group	Group B	Number of credits	2

Number of weekly time blocks	1	Class style	Lecture (Face-to-face course)	Year/semesters	2026・First semester

Days and periods	Tue.3	Target year	All students	Eligible students	For all majors

[Overview and purpose of the course]

The rapid progress of computers has made it possible to analyze various social and natural phenomena by mathematical methods, and the importance of these methods is increasing.

As a basis for learning such mathematical methods, this course provides basic mathematics of differential and integral calculus for liberal arts students.

The course does not require high school mathematics for students aspiring to be scientists and engineers (high school mathematics III) but is designed so that students who have taken only high school mathematics courses for liberal arts can understand the content of the course.

Differentiation and integration of functions of one variable and differentiation of functions of two variables will be taught.

[Course objectives]

To understand the basic concepts and theorems of derivatives and integral of univariate functions and derivatives of bivariate functions and to acquire the computational techniques to apply them.

[Course schedule and contents)]

The following subjects will be explained. There will be 15 lessons, including feedback. The order of subjects is not fixed, but the lecturer will decide according to the lecturer's lecture policy and the student's background and understanding of the subject.

1. Number sequences and functions (limits of sequences, *infinite series, limits of functions, continuous functions, composition of functions, elementary functions, *inverse functions) [2-3 weeks]
2. Differentiation (differential coefficients, derivatives, derivatives of products and quotients, derivatives of composite functions, derivatives of elementary functions, mean value theorem, increase/decrease and maxima/minima of functions, *Taylor expansion) [4-6 weeks]
3. Integral calculus (indefinite integral, primitive functions of elementary functions, integrals by substitution, integration by parts, definite integral, *area, *volume of revolution) [2-3 weeks]
4. Differentiation of bivariate functions (functions of two variables, partial differentiation, total differentiation, differentiation of composite functions of two variables, extrema, *tangent plane, *conditional extrema problem) [3-4 weeks]
5. Feedback [1 week]

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Calculus-E2 [For non-science majors](2)

Items marked with an asterisk (*) will be covered if time permits.
In addition to lectures on the above topics, there will be exercises (in-class exercises or homework) related to the topics.

[Course requirements]

Students are assumed to have a good understanding of high school mathematics except calculus.

[Evaluation methods and policy]

30% Homework and participation
20% Midterm quiz
50% Final test

[Textbooks]

Instructions on the textbook will be given in class. For those topics for which no appropriate textbook is available, printed or electronic materials will be provided by the lecturer.

[References, etc.]

（References, etc.）
Introduced during class

[Study outside of class (preparation and review)]

In order to learn mathematics, it is necessary to try to solve the exercises on your own, in addition to preparing and reviewing the lectures.

[Other information (office hours, etc.)]

[Essential courses]