Mathematics 1

Syllabus Number 5B110
Basic Major Subjects
Elective Requisites 2 credit

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1. Course Description

This course is conducted as following along with the lines of the textbook. The items covered are as follows:
(1) Definition and law of the exponential function, logarithmic function, and trigonometric function
(2) The handling of the logarithm graph
(3) The statistical basics

Every time I will lecture along the textbook and carry out quizzes. As for quizzes, you can solve it consulting with nearby students.
In this lesson, you will acquire knowledge, techniques, and attitudes about DP1 and DP2.

2. Course Objectives

The aims of the course are to encourage and enable students to:
・understand the foundation of various functions
・develop skills necessary for problem-solving
・be able to apply knowledge of exponent and logarithm to actual problems

3. Grading Policy

Your final grade will be calculated according to the following process: Quizzes (15%),midterm exam(50%),term-end exam(35%).
In order to obtain S evaluation, it is necessary to have a correct answer rate of 90% or more in the midterm exam and the term-end exam.
Periodic tests conducted during the test period will be the final evaluation.

4. Textbook and Reference

Textbook
Textbook: Yoshihiro Tashiro "Basic mathematics of engineering" Morikita publication ISBN 978-4-627-04912-3

In addition, some handout are distributed as necessary.

5. Requirements(Assignments)

Subtitles of the next quiz are presented each time. As preparation, refer to textbooks and handouts, solve them, and put them in your notebook (30 minutes).
As a review, you should redo the question of the quiz that could not be solved by yourself, organize the notes, and improve the computing power by solving the textbook exercises (90 minutes).
Practice tests with model answers will be distributed so that you can use them for learning.
More than 30 hours of learning is required during this period.

6. Note

7. Schedule

[1]	Guidance and problem exercises, basis of index
[2]	Exponential and logarithm 1: Exponential law, exponential calculation
[3]	Exponential and logarithm 2: logarithm law, log calculation
[4]	Exponential and logarithm 3: How to solve the equation
[5]	Trigonometric function 1: Angle and trigonometric ratio, definition of radian, basic properties
[6]	Trigonometric function 2: addition theorem, synthesis of trigonometric functions
[7]	Trigonometric function 3: Inverse function definition, inverse trigonometric function
[8]	Summary of various functions and problem exercises
[9]	Midterm Exam
[10]	Graph representation method 1: How to draw and read graphs, Handling logarithmic axes
[11]	Graph representation method 2: Utilization of logarithmic graph
[12]	Foundation of statistical analysis 1: Mean, Standard Deviation, Standard Error
[13]	Foundation of statistical analysis 2: Histogram, Normal Distribution, Confidence Interval, Significant Difference Test
[14]	Foundation of statistical analysis 3: t-distribution, t-test
[15]	Term-end Exam and summary