

# Physics 1

Syllabus Number

2G106

Basic Major Subjects

Requisites 2 credit

HINO, Hiroshi

## 1. Course Description

I will give you lectures, exchanging an exercise with speed, acceleration, an equation of motion, work, and energy and about themes, such as movement. I learn the knowledge and skill about DP2 and DP3 in this lesson.

## 2. Course Objectives

Physics is the learning used as the foundation of mechanical engineering. You understand the fundamental contents needed for engineers, such as dynamics, in it to make the foundation for studying a special subject. In addition, a setup etc. are idealized and abstracted and the concept of dynamics has a field which does not suit the language used experience in every day as I am unexpected. Based on the point, you get used to a fundamental concept, and aim at coming also being able to perform easy application calculation. As a concrete item, they are the following matters. You get used to the treatment of an international unit or a significant figure. He/she studies balance and composition of power and I understand the concept of a vector. In uniform motion, I understand the relation between distance, time, and speed. You understand that speed and acceleration are the time rates of change in a position or speed. You understand the first law, the second law, and the third law of Newton. You understand the formula of uniform accelerated motion.

## 3. Grading Policy

The results of a term-end examination mainly estimate. They are 90% of a periodic exam, and 10% of a subject in a lesson. I do 追 and a re-examination on the unsuccessful applicant(s) of a periodic exam in principle. About the subject which asked for presentation during session, I certainly answer, and include the answers in the results.

## 4. Textbook and Reference

Textbook

Hara Yasuo Fundamental physics study 4th edition scientific books publication

## 5. Requirements(Assignments)

Before a lesson, please read and understand the next lecture range of the specified textbook, and summarize the main point. (About 1 hour) After a lesson should review the subject in a lesson and should deepen an understanding. If a formula is only memorized, there is nothing, and please understand the concept of physics, such as a law of movement, and summarize an important point in a note. (About 2 hours)

## 6. Note

We use a mathematical calculator. In a term-end examination, I set the question on condition of possession of a mathematical calculator.

## 7. Schedule

- |      |                                       |
|------|---------------------------------------|
| [1]  | Unit                                  |
| [2]  | Straight-line motion 1                |
| [3]  | Straight-line motion 2                |
| [4]  | Equation of motion                    |
| [5]  | Parabolic motion                      |
| [6]  | Vibration                             |
| [7]  | Work and energy                       |
| [8]  | Kinetic energy                        |
| [9]  | Potential energy                      |
| [10] | The law of conservation of energy     |
| [11] | Change of quantity of motion, impulse |
| [12] | Conservation of momentum              |
| [13] | Circular motion                       |
| [14] | Rotational movement                   |
| [15] | Conclusion and review                 |