

Basic Physics

Syllabus Number 0L192
Remedial Subject
Elective 2 credit
NAKAMURA, Shinichi

1. Course Description

Static dynamics, Newton's law of motion, action / reaction, speed and acceleration, free fall and parabolic movement, momentum, work and energy

By following the textbook, I will explain the details and show concrete calculations. Do exercises every time and increase your understanding. We will explain the physical phenomena using VTR, DVD for the first one hour each time and practice in the rest of the time.

In this lesson, you will acquire knowledge on study objective 2.

2. Course Objectives

The goal is to understand the field of physics mechanics. We will learn about the position, velocity, acceleration of objects and exercise when force is applied to objects. The level of this course is suitable for those who did not take physics at high school.

The goal is to understand the dynamics phenomena in the vicinity and to acquire the fundamental power leading to the subsequent Physics 1.

3. Grading Policy

After learning in the lecture, we will do simple exercises and make it more familiar. At the end of the lecture, I will ask you to submit the exercise result. Grades are evaluated by totaling the scores of each exercise result. When additional reports are given, those points may be added.

4. Textbook and Reference

Textbook

Yasuo Hara Basic Physics Academic Book Publisher, ISBN 978-4-7806-0660-7

Another textbook can be used equivalent to "Basic Physics"

5. Requirements(Assignments)

Please read the mechanics part of the specified textbook (or equivalent textbook) in advance about 1.5 hours as a preliminary study.

Master the math necessary for understanding.

Please study related areas in the textbook for about 1.5 hours as a review.

6. Note

Please bring report paper and scientific calculator every time for exercises.

We will use NHK educational materials VTR / DVD and college science DVD.

We will use the homepage to post exercises. <http://www.mse.teikyo-u.ac.jp/faculty/nakamura/>

7. Schedule

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|------|---|
| [1] | About unit |
| [2] | Velocity |
| [3] | Acceleration |
| [4] | Falling movement |
| [5] | Parabolic motion |
| [6] | Force |
| [7] | Law of motion (1) Inertia |
| [8] | Law of motion (2) Motion and weight |
| [9] | Various motion (1) circular motion |
| [10] | Various motion (2) Single pendulum |
| [11] | Work and energy (1) work |
| [12] | Work and energy (2) Kinetic energy and potential energy |
| [13] | Work and energy (3) Mechanical energy |
| [14] | Relativity of movement |
| [15] | Summary |