Physics 2

Syllabus Number 5B113
Basic Major Subjects
Elective Requisites 2 credit

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1. Course Description

We handle rotational motion, rigid body, wave motion.
Following the text flow, I will explain in detail and show concrete calculations. Do exercises every time and increase your understanding. The exercise is active learning, and students consult with each other and discuss them and solve them. Each lecture gives lectures by boardwork for the first hour or so and exercises for the remaining hours.
In this lesson, you will acquire knowledge about DP1 and 2.

2. Course Objectives

Learn the fundamentals of wave, deepen understanding through simple exercises, aim at the level of Physics 2 in the first and second years.
The goal is to understand the fundamental of rotational motion and rigid body, wave.

3. Grading Policy

Grades will be evaluated only by the results of the final exams. However, when exercises are given as supplements etc., report points may be added to the submitter.
Each exercise and answer will be posted on the homepage. By reviewing each page on the homepage, you can feed back your learning outcomes.

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 acoustic or light wave parts of the specified textbook (or equivalent textbook) in advance about 1.5 hours as preliminary study. Master the math necessary for understanding.
As a review for 1.5 hours, please answer every exercise question, and study further about the related part of the textbook.

6. Note

Please bring a scientific calculator every time for exercises.
In some cases, OHP, VTR, DVD will be used in combination.
We will use the homepage to place exercises. http://www.ase.teikyo-u.ac.jp/faculty/nakamura/

7. Schedule

[1] Rotational motion and rigid body (1) Rotational motion of mass point
[2] Rotational motion and rigid body (2) Law of universal gravitation and planets, movement of satellites
[3] Rotational motion and rigid body (3) Rigid body balancing, center of gravity
[4] Rotational motion and rigid body (4) Rotary motion of rigid body
[5] Nature of wave (1) Transverse waves, longitudinal waves, how to express waves
[6] Nature of wave (2) Principle of wave superposition and interference
[7] Nature of wave (3) Phase of reflected wave
[8] Nature of wave (4) Natural vibration of string
[9] Sonic wave (1) Three elements of sound, sound wave speed
[10] Sonic wave (2) Air column vibration, beat
[11] Sonic wave (3) Doppler effect
[12] Light wave (1) Reflection and refraction of light
[13] Light wave (2) Dispersion of light, diffraction grating
[14] Light wave (3) Doppler effect of lightwave
[15] Summary