

Physics 2

Syllabus Number 2G207
Basic Major Subjects
Requisites 2 credit
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1. Course Description

Students study work and energy, potential energy and kinetic energy, momentum, rotary motion of rigid body etc. based on the "Physics 1"
Students can acquire knowledge about DP1 in this class.

2. Course Objectives

Goal of this class is that students comprehend basic principle of work and energy, potential energy and kinetic energy, momentum, rotary motion of rigid body etc. and solve problems, written in the text, based on the principle in their own force.

3. Grading Policy

Attendance more than two thirds, midterm exam (50%) and term end exam (50%).
The students will get simple explanations after these exams.

4. Textbook and Reference

Textbook
Text 1: ISBN978-4873610740

Text 2: ISBN978-4873610757

5. Requirements(Assignments)

Review the Newtonian mechanics students studied in the class "Physics 1". If students are not good at it, read the text within the contents of the next lecture and write in a notebook (1.5 hours). After the lecture will be ended, solve the exercises in the text in order to review (1.5 hours).

6. Note

Bring a scientific calculator in case of calculation training in every class.
There is a possibility of change of the contents of class depending on the progress.

7. Schedule

- [1] Work and energy (1) : work that constant force do
- [2] Work and energy (2) : work and kinetic energy, power
- [3] Potential energy and conservation law of energy (1) : potential energy
- [4] Potential energy and conservation law of energy (2) : conservation law of energy
- [5] Momentum and impulse (1) : momentum and impulse
- [6] Momentum and impulse (2) : two-dimensional collision, center of mass
- [7] Momentum and impulse (3) : motion in mass system
- [8] Summary, Midterm exam
- [9] Rotation of rigid body around rotation shaft (1) : equiangular velocity rotational motion
- [10] Rotation of rigid body around rotation shaft (2) : moment of inertia, torque
- [11] Rotation of rigid body around rotation shaft (3) : work and energy at rotational motion
- [12] Rolling motion, angular momentum and torque (1) : rolling motion of rigid body, angular momentum
- [13] Rolling motion, angular momentum and torque (2) : conservation of angular momentum
- [14] Equilibrium condition
- [15] Law of universal gravitation : Newton's law of universal gravitation