

Class ID

(NOT your
university ID)

Homework Exam I

(30% of the entire exam)

Please read the following before you write your name.

Name: _____ (↩ Don't forget your class ID.)

You must follow all of the instructions (next page). Please read every item carefully. Asking questions is your responsibility if you are not sure about the instruction.

Write out each step in extra papers. The report must be **typed and neatly organized**.

Discussing with other people is allowed. **However, copying someone's or asking someone to do this exam is strictly prohibited.** The most important thing is that the proposal must be only one in class; namely, if it is almost identical with others, this will not be graded. Similar wording, only values replaced, only different setting of the situation, etc. will be recognized as academic dishonesty.

Missing your class ID or your name will be minus five points for each.

This will be thirty percent of the total points for the entire exam. This will be graded with each criterion, such as completeness, concreteness, comprehension, consistency, etc. An interesting idea may give you extra points (only 5% of the total number of students).

Asking the class instructor any questions and consultation is encouraged especially for students who do not know how to get started.

The due date is the day on the in-class exam.

Completeness

Concreteness

Comprehension

Consistency

Convincingness

Total Score

Let's write a proposal!

Find an innovative solution for a problem (or a need) that you face. The ideas must come from what you have learned in the three chapters, such as Vibrations and Waves, Sound, and Electric Forces and Fields. For example, you can utilize Hooke's Law, Periodic Motion, Principle of Superposition, Coulomb's Law, Electric Field, etc.

Follow this instruction. (*Please type it, and the total number of pages cannot exceed two pages with single space.*)

[1] Write your background.

What are your major, interests, future goals, philosophy, achievements, etc? Why do you come up with this problem? (Not more than half of a page with single space)

[2] Write a problem you are facing, or innovative ideas to sell, or needs that you observe.

This must be based on your experience or your finding. Describe this part as detailed as possible, such as when, where, who did or who was the witness, why, what, how, etc.

[3] Propose some idea(s) or solutions toward the above problems or needs by using the concepts from what you have learned in physics II class.

No need to prove whether your idea can work, but you have to convince me of plausibility of your ideas. You are required: to point out the solution based on the concept you are using; to have correct understanding of the physics; and to justify that your idea would work based on evidence or facts. No calculation is needed.

The proposal will be examined with 6 C's.

The proposal missing one of the following (except #6) items will be rejected.

1. Completeness: Follow the above instruction. Label for each item that you are going to write. If you did not write one of the above items, your proposal will be rejected.
2. Concreteness: The problem and solution have to be written in detail. It has to be based on your experience (or whatever you can describe in detail). **If the topic is technical, write the reference.**
3. Comprehension: The basic physical concept you utilize has to be correct although your ideas toward proposal do not have to be objectively correct.
4. Consistency: The structure must be logical. If your problem and proposed idea are significantly deviated, it will be considered as an invalid proposal.
5. Convincingness: By using support ideas, you have to convince me of the feasibility of your idea.
6. Creativity: If your proposal is very original and creative compared with other students, extra points will be added.

Hints for the idea

Think of your daily life. Any problem with your house? Do you want to invent something to solve a problem? Solve some health issue? Energy and environmental problems? Can you apply some to your own research? How about your hobbies? Any innovative entertainment?