

Course Syllabi

1. MAES-00099 PHYSICAL I

2. Instructors:

- Maria Veronica Saetama Gualpa
- Daniela Estefania Zuñiga Garcia
- Diana Jesus Andrade Muñoz

3. Bibliography

- Física para Ciencias e Ingeniería

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- Física/67605, Robert Resnick, David Halliday, Kenneth S. Krane, 2001

- Física universitaria: con física moderna 1/35893223, Sears y Zemansky, Hugh D. Young y Roger A. Freedman, 2018

4. Specific Course Information

- a. Physics I, is a subject that addresses the study of physical phenomena that happen in nature, allows to interpret them and give solutions to macroscopic problems related to the mechanics of solids, being constituted a basic tool for its application in the field of Chemical Engineering; as well as, to develop the ability to communicate effectively in individual, group and/or multi-ethnic environments. The subject is aligned with the learning results of Ing's career. chemical eniería in its literal 1 and 2.

5. Learning Objectives of the Course

- a. To know the macroscopic behavior of matter in the field of solid mechanics, generating a relationship between its environment, science and technology. - To describe the behavior of phenomena related to kinematic, dynamic, and static, for its interpretation and resolution of problems in the field of Chemical Engineering. - To identify the phenomena related to work, energy, amount of movement, impulse and collisions.

b. Learning Outcomes

1. It recognizes the principles of work, energy and energy conservation in conservation and non-conservative systems.
2. It describes the movement of bodies through mathematical equations.
3. Distinguish types of interactions between bodies (collisions)
4. It identifies the different scalar/vectoral magnitudes and establishes a reliability framework for measuring magnitudes.
5. He knows fundamental physical concepts that determine the movement of bodies caused by forces, as well as equilibrium conditions.

6. Course Topics

1. Measurements and vector algebra
2. Cinematics
3. Statistics and dynamics
4. Mechanical energy
5. Line moment, boost and collisions

6. Dynamic rotational