



**ATILIM
ÜNİVERSİTESİ**

**CIVIL AVIATION SCHOOL
DEPARTMENT OF AVIONICS
PHYSICS 1 (PHYS 103)
2020-2021 FALL SEMESTER
SYLLABUS**

Instructor: Özge SÜRÜCÜ

Course Objective: Upon the successful completion of this course, students will have basic information about the concepts of nature of matter, mechanics, kinetics and dynamics. This includes creating relationships between these concepts with defining, modelling, and solving problems for the first time in the student's career in line with the needs of EASA-66 Module 2.

Weeks	Topics
W1	Nature of Elements; Molecule, Chemical Bonds
W2	Kinetic Theory of Matter
W3	Forces, Moments and Couples,
W4	Centre of Gravity
W5	Stress, Strain & Elasticity
W6	Nature and Properties of Solids, Fluids and Gases; Pressure and Buoyancy in Liquids
W7	One-Dimensional Motion; Motion at Constant Acceleration
W8	Two-Dimensional Motion; Springs and Simple Pendulum
W9	Simple Theory of Vibration, Harmonics and Resonance
W10	Newton's Laws of Motion
W11	Rotational Dynamics; Torque and Rotational Inertia
W12	Applications of Newton's Laws Involving Friction; Momentum and Its Relation to Force

Course Material:

- Books:** 1. IR Part-66, Aircraft Maintenance License, Distance Learning Modules, Module 2 – Physics, Strike, C. Cardiff and Vale College (2011).
2. Physics for Scientists and Engineers with Modern Physics, by Giancoli, C.G. (4th edition), New International Edition, Pearson (2014).
3. Fundamentals of Physics, by Halliday, D., Resnick, R., and Walker, J. (10th edition), Extended, John Wiley & Sons, Inc. (2013).

Grading:

Midterm 1: 35%
Final exam: 50%
Lab: 15%

PHYS103 Laboratory Program

Experiment Number	Experiment Name	Laboratory zoom sessions		Deadline for submission of laboratory reports
Exp0	Introduction to Mechanics Laboratory	27.10.2020	13.30-15.30	01.11.2020
Exp1	Motion in One Dimension: Instantaneous vs. Average Velocity	24.11.2020	13.30-15.30	06.12.2020
Exp2	Two Dimensional Motion	08.12.2020	13.30-15.30	20.12.2020
Exp3	Newton's Second Law	29.12.2020	13.30-15.30	10.01.2020

Announcements for the PHYS103 Laboratory

- Laboratories will start on 27.10 2020
- Laboratory practice course will be held via Zoom. You are not allowed to attend a laboratory Zoom session if you happen to be late more than 15 minutes. If you want, you can attend another suitable Zoom session.
- Laboratory zoom sessions will be held according your laboratory program wich is given above.
- During the fall semester 4 experiments will be held.
- Experiments will be performed through a simulation program. Your computer needs to be able to run Java, Microsoft Word and Excel programs.
- After the simulated experiment, you will fill out an experiment report. A PDF version of completed report will be send via e-mail to atilim.physicsgroup@gmail.com.
- You have to send this document via your e-mail address given by Atılım University (...@student.atilim.edu.tr). Communication and documents sent from other mail addresses (such as Outlook, Yahoo, Gmail, Hotmail, etc.) will NOT be accepted.
- The materials of the related experiment will be shared on Moodle.
- 2 weeks will be given to complete the experiments except for the Exp0. You will only have 1 week to complete the Exp0.
- You need a scientific calculator during laboratory sessions, during courses and during exams.
- All grades are periodically announced. Keep on checking regularly all your grades from our Website (<https://www.atilim.edu.tr/tr/physics>). Objections are to be considered only at laboratory Zoom sessions.
- Detailed rules about the laboratory part will be announced in the zoom session.
- If you have any questions, please contact;
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