



EESTI LENNUAKADEEMIA

Õppematerjalide ajakohasuse protokoll 2023/2024 õppeaasta

Õppematerjal on vastavuses Eesti Lennuakadeemia õppeprogrammile (MTOE 4.2.0, 4.2.1, 4.2.2, 4.2.3), Euroopa Komisjoni regulatsiooni Osa-66 liitega I.

Mooduli nr: Moodul 2

Õppematerjali nimetus: INTERNATIONAL CENTRE FOR AEROSPACE TRAINING (ICAT)
MODULE 2 - PHYSICS

Lisainfo: International Centre for Aerospace Training (ICAT) paberkandjal ja e-raamatuna
(A, B1, B2 kategooria)

Õppematerjali pealkiri: INTERNATIONAL CENTRE FOR AEROSPACE TRAINING (ICAT)
MODULE 2 - PHYSICS

Revisjoni number: 1

Kasutusperiood: september 2023 – september 2024

Heaks kiidetud veebikeskkond distantõppe
läbiviimiseks

Zoom (<https://zoom.us/>)

Google Classroom (classroom.google.com)

Protokolli koostamise kuupäev: 02.08.2023

MTO koolitusjuht: Madis Parv
(allkirjastatud digitaalselt)

ÕPPEMATERJALI VASTAVUSHINDAMISE KONTROLL-LEHT

Mooduli nr. ja nimetus: Module 2 Physics	Tase			Õppematerjali vastavus Osa-66 Lisa III mooduli programmile
	A	B1	B2	
2.1 Matter <i>Nature of matter: the chemical elements, structure of atoms, molecules;</i> <i>Chemical compounds;</i> <i>States: solid, liquid and gaseous;</i> <i>Changes between states.</i>	1	1	1	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
2.2 Mechanics 2.2.1 Statics <i>Forces, moments and couples, representation as vectors;</i> <i>Centre of gravity;</i> <i>Elements of theory of stress, strain and elasticity: tension, compression, shear and torsion;</i> <i>Nature and properties of solid, fluid and gas;</i> <i>Pressure and buoyancy in liquids (barometers).</i>	1	2	1	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
2.2.2 Kinetics <i>Linear movement: uniform motion in a straight line, motion under constant acceleration (motion under gravity);</i> <i>Rotational movement: uniform circular motion (centrifugal/centripetal forces);</i> <i>Periodic motion: pendular movement;</i> <i>Simple theory of vibration, harmonics and resonance;</i> <i>Velocity ratio, mechanical advantage and efficiency.</i>	1	2	1	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
2.2.3 Dynamics <i>(a) Mass; Force, inertia, work, power, energy (potential, kinetic and total energy), heat, efficiency;</i> <i>(b) Momentum, conservation of momentum; Impulse; Gyroscopic principles; Friction: nature and effects, coefficient of friction (rolling resistance).</i>	1 1	2 2	1 2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
2.2.4 Fluid dynamics <i>(a) Specific gravity and density;</i> <i>(b) Viscosity, fluid resistance, effects of streamlining; Effects of compressibility on fluids; Static, dynamic and total pressure: Bernoulli's Theorem, venturi.</i>	2 1	2 2	2 1	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
2.3 Thermodynamics <i>(a) Temperature: thermometers and temperature scales: Celsius, Fahrenheit and Kelvin; Heat definition;</i> <i>(b) Heat capacity, specific heat; Heat transfer: convection, radiation and conduction; Volumetric expansion;</i> <i>First and second law of thermodynamics;</i>	2 -	2 2	2 2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta

<p><i>Gases: ideal gases laws; specific heat at constant volume and constant pressure, work done by expanding gas;</i></p> <p><i>Isothermal, adiabatic expansion and compression, engine cycles, constant volume and constant pressure, refrigerators and heat pumps;</i></p> <p><i>Latent heats of fusion and evaporation, thermal energy, heat of combustion.</i></p>				
<p>2.4 Optics (Light)</p> <p><i>Nature of light; speed of light;</i></p> <p><i>Laws of reflection and refraction: reflection at plane surfaces, reflection by spherical mirrors, refraction, lenses;</i></p> <p><i>Fibre optics.</i></p>	-	2	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
<p>2.5 Wave Motion and Sound</p> <p><i>Wave motion: mechanical waves, sinusoidal wave motion, interference phenomena, standing waves;</i></p> <p><i>Sound: speed of sound, production of sound, intensity, pitch and quality, Doppler effect.</i></p>	-	2	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta

OTSUS:

Õppematerjal **vastab** kehtiva määruse Osa-66 Lisa III I liite mooduli programmile.

Õppematerjali vastavuse kontrollis ja kinnitas:

MTO koolitusjuht: Madis Parv
 /allkirjastatud digitaalselt/

Kuupäev: 02.08.2023