



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 5

Õppematerjali nimetus: INTERNATIONAL CENTRE FOR AEROSPACE TRAINING (ICAT)
MODULE 5 - DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS

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

Õppematerjali pealkiri: INTERNATIONAL CENTRE FOR AEROSPACE TRAINING (ICAT)
MODULE 5 - DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS

Revisjoni number: 1

Kasutusperiood: september 2023 – september 2024

Heaks kiidetud veebikeskkond distantsõppe
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 5 Digital Techniques/Electronic Instrument Systems	Tase				Õppematerjali vastavus Osa-66 Lisa III mooduli programmile
	A	B1.1 B1.3	B1.2 B1.4	B2	
5.1 Electronic Instrument Systems <i>Typical systems arrangements and cockpit layout of electronic instrument systems.</i>	1	2	2	3	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.2 Numbering Systems <i>Numbering systems: binary, octal and hexadecimal; Demonstration of conversions between the decimal and binary, octal and hexadecimal systems and vice versa.</i>	-	1	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.3 Data Conversion <i>Analogue Data, Digital Data; Operation and application of analogue to digital, and digital to analogue converters, inputs and outputs, limitations of various types.</i>	-	1	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.4 Data Buses <i>Operation of data buses in aircraft systems, including knowledge of ARINC and other specifications. Aircraft Network/Ethernet.</i>	-	2	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.5 Logic Circuits <i>(a) Identification of common logic gate symbols, tables and equivalent circuits; Applications used for aircraft systems, schematic diagrams.</i> <i>(b) Interpretation of logic diagrams.</i>	-	2	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
	-	-	-	2	
5.6 Basic Computer Structure <i>(a) Computer terminology (including bit, byte, software, hardware, CPU, IC, and various memory devices such as RAM, ROM, PROM); Computer technology (as applied in aircraft systems).</i> <i>(b) Computer related terminology; Operation, layout and interface of the major components in a micro computer including their associated bus systems; Information contained in single and multiaddress instruction words; Memory associated terms; Operation of typical memory devices; Operation, advantages and disadvantages of the various data storage systems.</i>	1	2	-	-	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
	-	-	-	2	
5.7 Microprocessors <i>Functions performed and overall operation of a microprocessor; Basic operation of each of the following microprocessor elements: control and processing unit, clock, register, arithmetic logic unit.</i>	-	-	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.8 Integrated Circuits	-	-	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta

<i>Operation and use of encoders and decoders; Function of encoder types; Uses of medium, large and very large scale integration.</i>					
5.9 Multiplexing <i>Operation, application and identification in logic diagrams of multi plexers and demultiplexers.</i>	-	-	-	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.10 Fibre Optics <i>Advantages and disadvantages of fibre optic data transmission over electrical wire propagation; Fibre optic data bus; Fibre optic related terms; Terminations; Couplers, control terminals, remote terminals; Application of fibre optics in aircraft systems.</i>	-	1	1	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.11 Electronic Displays <i>Principles of operation of common types of displays used in modern aircraft, including Cathode Ray Tubes, Light Emitting Diodes and Liquid Crystal Display.</i>	-	2	1	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.12 Electrostatic Sensitive Devices <i>Special handling of components sensitive to electrostatic discharges; Awareness of risks and possible damage, component and personnel anti-static protection devices.</i>	1	2	2	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.13 Software Management Control <i>Awareness of restrictions, airworthiness requirements and possible catastrophic effects of unapproved changes to software programmes.</i>	-	2	1	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.14 Electromagnetic Environment <i>Influence of the following phenomena on maintenance practices for electronic system: EMC-Electromagnetic Compatibility EMI-Electromagnetic Interference HIRF-High Intensity Radiated Field Lightning/lightning protection.</i>	-	2	2	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta
5.15 Typical Electronic/Digital Aircraft Systems <i>General arrangement of typical electronic/digital aircraft systems and associated BITE (Built In Test Equipment) such as:</i> (a) <i>For B1 and B2 only:</i> <i>ACARS-ARINC Communication and Addressing and Reporting System</i> <i>EICAS-Engine Indication and Crew Alerting System</i> <i>FBW-Fly-by-Wire</i> <i>FMS-Flight Management System</i> <i>IRS-Inertial Reference System;</i> (b) <i>For B1, B2 and B3:</i> <i>ECAM-Electronic Centralised Aircraft Monitoring</i> <i>EFIS-Electronic Flight Instrument System</i> <i>GPS-Global Positioning System</i> <i>TCAS-Traffic Alert Collision Avoidance System</i> <i>Integrated Modular Avionics</i> <i>Cabin Systems Information Systems.</i>	-	2	2	2	<input checked="" type="checkbox"/> Kontrollitud, vastab <input type="checkbox"/> Kontrollitud, ei vasta

