**UMO for the profile "Aviation equipment"**

**external resources of the specialty 1205000 " traffic Management and operation of air transport»**

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| **№ п/п** | **Discipline** | **Theme** | **External resources** | |
| **Video lesson** | **Additional material** |
| 1 | Design and functional systems of aircraft | Purpose of control systems and requirements for them. | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?tex>t |
| 2 | Design and functional systems of aircraft | Aircraft control systems with amplifiers | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?clid> |
| 3 | Design and functional systems of aircraft | Principle of operation of the power hydraulic system. | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?tex>t |
| 4 | Design and functional systems of aircraft | Hydraulic system units (pumps, hydraulic motors, switchgear, pressure reducing and safety valves, hydro - pneumatic accumulators, hydraulic amplifiers, sealing devices, filters). | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?clid> |
| 5 | Design and functional systems of aircraft | Advantages of hydraulic systems. Hydraulic fluids of hydraulic systems | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?tex>t |
| 6 | Design and functional systems of aircraft | The fuel system of the aircraft  Purpose and requirements for the fuel system. | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?clid> |
| 7 | Design and functional systems of aircraft | Агрегаты топливных систем. Аварийный слив топлива | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?tex>t |
| 8 | Design and functional systems of aircraft | Aircraft oil systems  Purpose and requirements for the oil system. | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?tex>t |
| 9 | Design and functional systems of aircraft | Aggregates of oil systems. Tank communication systems with the atmosphere. | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?clid> |
| 10 | Design and functional systems of aircraft | Purpose and main requirements of the SARD. | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?tex>t |
| 11 | Design and functional systems of aircraft | General information about the air conditioning system (SLE). | <https://www.youtube.com/results?search_query> | <https://yandex.kz/search/?clid> |
| 12 | Aviation fuels and lubricants and special liquids | Classification аviаGSМ | <https://www.youtube.com/watch?v=aN2FCTiBc0o&feature=youtu.be> |  |
| 13 | Aviation fuels and lubricants and special liquids | The concept of quality of aviation fuel. Quality control system | <https://www.youtube.com/watch?v=FFjyCPxgNWc&feature=youtu.be> |  |
| 14 | Aviation fuels and lubricants and special liquids | Aviation gasoline | <https://www.youtube.com/watch?v=XzDIAV7UljM&feature=youtu.be> |  |
| 22 | Aviation fuels and lubricants and special liquids | Aviation gasoline | <https://www.youtube.com/watch?v=PAtLv2bSznY&feature=youtu.be> |  |
| 23 | Aviation fuels and lubricants and special liquids | Aviation oil | <https://www.youtube.com/watch?v=T0kqJ9f7BpA&feature=youtu.be> |  |
| 24 | Aviation fuels and lubricants and special liquids | Plastic lubricant | <https://www.youtube.com/watch?v=G-sf9efUaNE&feature=youtu.be> |  |
| 25 | Aviation fuels and lubricants and special liquids | Solid lubricant | <https://www.youtube.com/watch?v=ktU8y9ydchs&feature=youtu.be> |  |
| 26 | Aviation fuels and lubricants and special liquids | Working fluids for shock struts of civil aviation aircraft | <https://www.youtube.com/watch?v=PJXtZlRn2ps&feature=youtu.be> |  |
| 27 | Aviation fuels and lubricants and special liquids | Working fluids for shock struts of civil aviation aircraft | <https://www.youtube.com/watch?v=CQK0ZKVos10&feature=youtu.be> |  |
| 28 | Aviation fuels and lubricants and special liquids | De-icing liquids | <https://youtu.be/h41hvVJPHlA>  <https://www.youtube.com/watch?v=aZeJs_UReOk&feature=youtu.be> |  |
| 29 | Materials science and metal processing | Screw thread. | <https://www.youtube.com/watch?v=qQQXoUXn7NM&feature=youtu.be> |  |
| 30 | Materials science and metal processing | Bolts, pins, and screws. | <https://www.youtube.com/watch?v=E2Eqr6y38UU&feature=youtu.be> |  |
| 31 | Materials science and metal processing | Aviation rivets | <https://www.youtube.com/watch?v=x8eREnPUn6w&feature=youtu.be> |  |
| 32 | Materials science and metal processing |  |  |  |
| 33 | Materials science and metal processing | Types of bearings and their areas применения. | <https://youtu.be/TAEganqg7BU> |  |
| 34 | Methods and means of technical diagnostics of aviation equipment | Cracks, the nature of their formation and patterns of development.  Types of defects and methods of visual inspection.  Fundamentals of fractography.  Methods of chemical analysis. material composition.  Methods for determining the mechanical properties of a material.  Eddy current MNK.  Capillary MNK.  Magnetic MNK.  Opto-visual MNK..  Methods of non-destructive testing, including liquid impregnation, radiography, Foucault currents. |  | <https://www.youtube.com/watch?v=0KpcKsyAit8>  <https://www.youtube.com/watch?v=nlE-v1921P0>  <https://www.youtube.com/watch?v=vxQAiMu72RE>  <https://www.youtube.com/watch?v=1KBaP8sZa4o>  <https://www.youtube.com/watch?v=OOHfhEx4KAY>  <https://www.youtube.com/watch?v=LdYzum2jCdI>  <https://www.youtube.com/watch?v=wlQGLtXQjXk> |
| 35 | Hydraulics | Main units of aircraft hydraulic systems | <https://www.youtube.com/watch?v=ZHZn1WzQp3c&feature=youtu.be> | <https://nsportal.ru/npo-spo/aviatsionnaya-i-raketno-kosmicheskaya-tekhnika/library/2018/05/24/gidravlicheskie-sistemy-0> |
| 36 | Hydraulics | Main units of aircraft hydraulic systems | <https://www.youtube.com/watch?v=ZHZn1WzQp3c&feature=youtu.be> | <https://nsportal.ru/npo-spo/aviatsionnaya-i-raketno-kosmicheskaya-tekhnika/library/2018/05/24/gidravlicheskie-sistemy-0> |
| 37 | Hydraulics | The layout of the system | <https://www.youtube.com/watch?v=IcfaYS2BISg&feature=youtu.be> | <https://nsportal.ru/npo-spo/aviatsionnaya-i-raketno-kosmicheskaya-tekhnika/library/2018/05/24/gidravlicheskie-sistemy-0> |
| 38 | Hydraulics | Hydraulic fluid | <https://www.youtube.com/watch?v=pjVV58Sb_p8> | <https://chem21.info/info/1787563/> |
| 39 | Hydraulics | The generation of pressure | <https://www.youtube.com/watch?v=ePd4gepa11Y&feature=youtu.be> | <http://avia.pro/blog/gidravlicheskaya-sistema-samoleta> |
| 40 | Hydraulics | Pressure control | <https://www.youtube.com/watch?v=eLQcANssNWA> | <https://aqua-rmnt.com/vodosnab/nasos/nasos-stancii/regulirovka-rele-davleniya-dlya-nasosa.html> |
| 41 | Hydraulics | System of indications and notifications | <https://www.youtube.com/watch?v=PFLkj2_678w&feature=youtu.be> |  |
| 42 | Hydraulics | Hydraulic fluid | <https://www.youtube.com/watch?v=pjVV58Sb_p8> | <https://chem21.info/info/1787563/> |
| 43 | Hydraulics | The generation of pressure | <https://www.youtube.com/watch?v=ePd4gepa11Y&feature=youtu.be> | <http://avia.pro/blog/gidravlicheskaya-sistema-samoleta> |
| 44 | Hydraulics | Pressure control | <https://www.youtube.com/watch?v=eLQcANssNWA> | <https://aqua-rmnt.com/vodosnab/nasos/nasos-stancii/regulirovka-rele-davleniya-dlya-nasosa.html> |
| 45 | Hydraulics | System of indications and notifications | <https://www.youtube.com/watch?v=PFLkj2_678w&feature=youtu.be> |  |
| 46 | The design and functionality of the AD system | Combustion chamber.  Gas turbine design.  Gas turbine design.  The output device of the GTE. |  | <https://cloud.mail.ru/public/2h8t/c1J86QAbt> |
| 47 | The design and functionality of the AD system | Section of the turbine.  Operation and characteristics of various types of turbines.  Connecting the blades to the disk. Operation of the turbine stage.  Design features and operating principles.Reverse.  Operation of adjustable exhaust devices. Noise reduction. Reverse.  Bearings and seals.  Design features and operating principles.  Design features and operating principles. |  | <https://cloud.mail.ru/public/2h8t/c1J86QAbt> |
| 48 | The design and functionality of the AD system | Lubricants and fuel.  Lubrication system. Oil system of turbine engines.  Operation, layout, and components of systems.  General characteristics of m/s.  Functioning of engine management systems (FADEC).  Pneumatic system.  Functioning of the engine air distribution system. |  | <https://cloud.mail.ru/public/2h8t/c1J86QAbt> |
| 49 | The design and functionality of the AD system | Combustion chamber.  Gas turbine design.  The device of gas turbines.  Output device of the gas turbine engine. |  |  |
| 50 | Introduction to the specialty | The physical conditions of the flight. | <https://www.youtube.com/watch?v=I_stkwidQXU> |  |
| 51 | Fundamentals of electrical engineering and electronics | **II. the basics of electronics**  **2.1. elements of electronic circuits**  **2.2 diodes, transistors, thyristors**  **2.3. analog electronic circuits**  **2.4. electrical signal amplifiers and generators**  **2.5. logic elements and diagrams**  **2.6. synthesis of combinational schemes in a logical element** | 1.YouTube  <https://www.youtube.com/watch?v=lW5KvtMC_SM>  2. <https://www.youtube.com/watch?v=PftpZdPpWFE>  3. <https://www.youtube.com/watch?v=7iVozldpPNY>  4. <https://www.youtube.com/watch?v=dK6JYunQoV8>  5.<https://youtu.be/ZAEs4XJtPPo> | Г.В.Ярочкина  <https://www.twirpx.com/file/89296/>    П.А.Бутырин  <https://www.studmed.ru/butyrin-pa-elektrotehnika-kniga-1_ae1ebdb5120.html>  Оқу құралы Т.М. Жолшарае, Ұ.Қ. Дегембаева  <http://libr.aues.kz/facultet/frts/kaf_e/11/umm/el_8.htm#_Toc265005422>  1.Презентация <https://slide-share.ru/analogti-ehlektrondi-qurilghilar-zhajlitusinikterkirispeanalogti-ehlektrondi-20127> |
| 52 | Professional English | **1.** Flight controls.  **1.1** Purpose and composition of aircraft control systems.  **1.2** Design features of aircraft control systems.  **2.** Fuel and oil systems. Purpose and scheme of fuel systems.  **2.1** Fuel and oil systems. Purpose and scheme of fuel systems.  **2.2** Fuel and oil systems. Purpose and scheme of fuel systems.  **2.3** Fuel and oil systems. Purpose and scheme of fuel systems.  **3.** Hydraulic system.  **3.1** The operating principle of the hydraulic system.  **3.2** Hydraulic fluid.  **3.3** Sources and consumers of hydraulic energy. | **1.** <https://www.youtube.com/watch?v=lgu4EypHvcc>  **1.1** <https://www.youtube.com/watch?v=nb74_jkr8u0>  **1.2** <https://www.youtube.com/watch?v=WhQ8Ai4fa_Q>  <https://www.youtube.com/watch?v=ZGdt9apUpqg>  **2.** <https://www.youtube.com/watch?v=cWDCXFwPLIs>  **2.1** <https://www.youtube.com/watch?v=fY3-xoEa6SY>  **2.2** <https://www.youtube.com/watch?v=rya4YFDpsPs>  **2.3** <https://www.youtube.com/watch?v=zIk_qxLfNtw>  <https://www.youtube.com/watch?v=urr55rAreWc>  **3.** <https://www.youtube.com/watch?v=XPH73GOd50w>  **3.1** <https://www.youtube.com/watch?v=LxVlRrBEsQM>  **3.2** <https://www.youtube.com/watch?v=6WM3fewU9w0>  **3.3** <https://www.youtube.com/watch?v=Qh78xpC_b9A>  <https://www.youtube.com/watch?v=uUE5chiEIxU> |  |