

Study plan

Name of study plan: 2.blok TL B2 11/12

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Technology of Aviation Maintenance

Garantor of the study branch: Ing. Martin Novák, Ph.D.

Program of study: Technology in Transportation and Telecommunications

Type of study: Bachelor full-time

Required credits: 120

Elective courses credits: 0

Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses

Minimal number of credits of the block: 120

The role of the block: Z

Code of the group: 5S.TLB2-06/07

Name of the group: 5.s.TL B2 od 06/07

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete at least 9 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
20ELT2	Electrotechnics 2	Z,ZK	4	2+2		Z
15J1A5	Foreign Language - English 5	Z	2	0+2		Z
21L2	Aircraft 2	Z,ZK	4	3+1		Z
21LAN1	English in Aviation 1	Z	2	0+2		Z
21LRTC	Radio Technology in Aviation	Z,ZK	4	2+2		Z
21PU3	Maintenance Procedures 3	KZ	5	3+1		Z
18SSP	Joints and Connecting Elements	Z,ZK	4	2+2	Z	Z
14SSS	Networks and Network Operating Systems	KZ	2	1+1		Z
21ZL2	Principles of Flight 2	Z,ZK	3	2+1		Z

Characteristics of the courses of this group of Study Plan: Code=5S.TLB2-06/07 Name=5.s.TL B2 od 06/07

20ELT2	Electrotechnics 2	Z,ZK	4	Ohm's law, Kirchoff's law, resistance and its measurement. Performance, work and energy (kinetic, potential); principle and function of capacitors. Computation of capacity and voltage in parallel and serial circuits. Theory of magnetism, magnetomotoric force, inductivity, induction coil, mutual inductivity. Theory of DC-generator, DC-engine.
15J1A5	Foreign Language - English 5	Z	2	The students of the Faculty of Transportation Sciences study two foreign languages one after another at the Department of Humanities. These courses aim at providing sufficient knowledge to communicate about every-day matters but also to read and write and discuss professional and specialised issues. Both gradually chosen language courses are ended with an exam (at the end of 4th and 8th semester; the TL (Air Traffic Control) specialisation students take an English exam only - at the end of 4th semester; the PP (Professional Pilot) specialisation students take two exams in English - at the end of 4th and 6th semester). Those students who want to apply for the Air Traffic specializations are recommended to enrol "English language" as their first choice. This is, however, not a guarantee for being excepted in the project study. Our department provides courses in English, German, French and Russian at different levels. The courses are also taught in our multimedia laboratory.
21L2	Aircraft 2	Z,ZK	4	Aircraft body, landing gear, tail, directional stability and control, problems with projects, performance envelope, load factor, technologies used in aircraft construction, materials used in construction, fuel system, oil system, electric circuit, ice control system, anti-fire system, control systems.
21LAN1	English in Aviation 1	Z	2	Students are expected to have perfectly passed the first block of English language. They will continue with the second block along with English in aviation. English in aviation A will introduce to the students basic terminology in the area of civil aviation. The lectures will be structured so one week the students go through the theory, special emphasis will be put on ability of students to receive information only in English. The next week will students use the theoretical knowledge in conversation and practical exercises? Audiovisual technology will also be used.

21LRTC	Radio Technology in Aviation Electric signals and the wave spectrum, modulations - amplitude, frequency and phase, impulse modulation, resonance circuits, electromagnetic field, wave range in aviation, radiation and reception of electromagnetic field, antennas in aviation, receivers and transmitters, basic navigation parameters and their measurements, principles of measurements of angle navigation parameters, distance, altitude, speed, drift angle, hyperbolic navigation system, Earth's satellites, GPS, ground radio navigation systems, NDB, VOR, DVOR, TVOR, DME, ILS, MLS, radiolocation in aviation, monitors in aviation	Z,ZK	4
21PU3	Maintenance Procedures 3	KZ	5
18SSP	Joints and Connecting Elements Screws and bolted assemblies, riveted joints, welding and brazing joints, adhesive bonding. Piping systems and components, pipe fittings, piping diagrams. Axles and shafts, axial locking devices. Tolerances and fits. Tolerancing of threads. Rolling bearings, mounting and arrangement of bearings, plain bearing units.	Z,ZK	4
14SSS	Networks and Network Operating Systems Acquaintance with operating and possibilities of computer networks and their services utilize is the subject target. Network topology, IP addressing, WAN networks, connection information (ping, trace route). Detailed familiarity with selected WIN NT, Novell, and Unix network environment in the second semester part. Introduction to server and workstations installation, users and groups creation, folder structure creation, disc mapping, users protection, folders security, network printing, network security.	KZ	2
21ZL2	Principles of Flight 2 Creation of lift, propeller, propulsion, thrust, efficiency of engine, aerodynamics of fixed and variable pitch propeller, propeller regimes, effect of propeller airflow, gyroscopic effect, balance of forces during horizontal flight, glide descent and landing, performance, take off, climb, acceleration, positive load, maneuvers and turns, stability and controllability, transonic speeds.	Z,ZK	3

Code of the group: 6S.TLB2-07/08

Name of the group: 6.s.TL B2 od 07/08

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete at least 8 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21AVI1	Avionics 1	Z,ZK	5	3+1		Z
14DAPS	Database and Presentation Systems	KZ	2	1+1		Z
21EPS2	Elektronik Instrumentation 2	Z,ZK	4	2+2		Z
20ELN	Electronics	Z,ZK	5	2+2		Z
20ELT3	Electrotechnics 3	Z,ZK	5	2+2		Z
15J1A6	Foreign Language - English 6	Z	2	0+2		Z
21PU4	Maintenance Procedures 4	KZ	3	2+0	L	Z
21PRX5	Training 5 - Specialisation Aviation Engineer	KZ	4	0+4	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S.TLB2-07/08 Name=6.s.TL B2 od 07/08

21AVI1	Avionics 1	Z,ZK	5
14DAPS	Database and Presentation Systems Database systems. E-R data model, relational data model, relational databases. Creation of a simple database application in the MS ACCESS environment. Creation of presentations by help of the PowerPoint environment - static snaps, simple animations, linking with other applications.	KZ	2
21EPS2	Elektronik Instrumentation 2	Z,ZK	4
20ELN	Electronics Properties of semiconductors, diodes, tranzistors, linear integrated circuits, operating amplifiers, technology of printed circuits.	Z,ZK	5
20ELT3	Electrotechnics 3 Production of alternating current. Alternating circuits with resistance, inductivity and capacity. Transformers, filters, alternating current generators and engines.	Z,ZK	5
15J1A6	Foreign Language - English 6 The students of the Faculty of Transportation Sciences study two foreign languages one after another at the Department of Humanities. These courses aim at providing sufficient knowledge to communicate about every-day matters but also to read and write and discuss professional and specialised issues. Both gradually chosen language courses are ended with an exam (at the end of 4th and 8th semester; the TL (Air Traffic Control) specialisation students take an English exam only - at the end of 4th semester; the PP (Professional Pilot) specialisation students take two exams in English - at the end of 4th and 6th semester). Those students who want to apply for the Air Traffic specializations are recommended to enrol "English language" as their first choice. This is, however, not a guarantee for being excepted in the project study. Our department provides courses in English, German, French and Russian at different levels. The courses are also taught in our multimedia laboratory.	Z	2
21PU4	Maintenance Procedures 4 Systems of maintenance and repairs within the aeronautical technology and their application for ensuring high reliability and the required airworthiness. Subject content is in accordance with the required knowledge of JAR 66(module 7,part7.4 and 7.16 to 7.19).	KZ	3
21PRX5	Training 5 - Specialisation Aviation Engineer	KZ	4

Code of the group: 7S.TLB2-07/07

Name of the group: 7.s.TL B2 od 07/08

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete at least 8 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21AVI2	Avionics 2	Z,ZK	5	3+1		Z
21EPS3	Electronical Instruments Systems 3	Z,ZK	4	2+2		Z
21FMS	Flight Management System	Z,ZK	5	4+1		Z
14IP1	Tutorial in Informatics 1	Z	2	0+2		Z
21PSU	Perspective Systems of Maintenance	Z,ZK	4	2+2		Z
21PU5	Maintenance Procedures 5	KZ	3	2+0	Z	Z
21PRX6	Training 6 - Specialisation Aviation Engineer	KZ	4	0+4	L	Z
21X17T	Project 7	KZ	3	0+2		Z

Characteristics of the courses of this group of Study Plan: Code=7S.TLB2-07/07 Name=7.s.TL B2 od 07/08

21AVI2	Avionics 2	Z,ZK	5		
21EPS3	Electronical Instruments Systems 3	Z,ZK	4		
21FMS	Flight Management System	Z,ZK	5		
14IP1	Tutorial in Informatics 1	Z	2		
The course involves introductory theoretical part (basic terminology from information technologies, information theory, computer terminology, data damage protection, theft and destruction, protection of computer network, security and legal problems relevant to information technologies, copyright and data protection law, computer criminality) and practical part according to the specialization.					
21PSU	Perspective Systems of Maintenance	Z,ZK	4		
21PU5	Maintenance Procedures 5	KZ	3		
Systems of maintenance and repairs within the aeronautical technology and their application for ensuring high reliability and the required airworthiness. Subject content is in accordance with the required knowledge of JAR 66 (module 7, part 7.20).					
21PRX6	Training 6 - Specialisation Aviation Engineer	KZ	4		
21X17T	Project 7	KZ	3		

Code of the group: 8S-TL-07/08

Name of the group: 8.s.TL od 07/08

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete at least 2 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21BPTL	Bachelor Thesis	Z	20	0+4		Z
21PRX7	Training 7 - Specialisation Aviation Engineer	Z	10	0+24	L	Z

Characteristics of the courses of this group of Study Plan: Code=8S-TL-07/08 Name=8.s.TL od 07/08

21BPTL	Bachelor Thesis	Z	20		
21PRX7	Training 7 - Specialisation Aviation Engineer	Z	10		
Practical training within the outline stated in Reference manual on training of maintenance personnel.					

List of courses of this pass:

Code	Name of the course	Completion	Credits
14DAPS	Database and Presentation Systems	KZ	2
Database systems. E-R data model, relational data model, relational databases. Creation of a simple database application in the MS ACCESS environment. Creation of presentations by help of the PowerPoint environment - static snaps, simple animations, linking with other applications.			
14IP1	Tutorial in Informatics 1	Z	2
The course involves introductory theoretical part (basic terminology from information technologies, information theory, computer terminology, data damage protection, theft and destruction, protection of computer network, security and legal problems relevant to information technologies, copyright and data protection law, computer criminality) and practical part according to the specialization.			

14SSS	Networks and Network Operating Systems	KZ	2
Acquaintance with operating and possibilities of computer networks and their services utilize is the subject target. Network topology, IP addressing, WAN networks, connection information (ping, trace route). Detailed familiarity with selected WIN NT, Novell, and Unix network environment in the second semester part. Introduction to server and workstations installation, users and groups creation, folder structure creation, disc mapping, users protection, folders security, network printing, network security.			
15J1A5	Foreign Language - English 5	Z	2
The students of the Faculty of Transportation Sciences study two foreign languages one after another at the Department of Humanities. These courses aim at providing sufficient knowledge to communicate about every-day matters but also to read and write and discuss professional and specialised issues.
 Both gradually chosen language courses are ended with an exam (at the end of 4th and 8th semester; the TL (Air Traffic Control) specialisation students take an English exam only - at the end of 4th semester; the PP (Professional Pilot) specialisation students take two exams in English - at the end of 4th and 6th semester). Those students who want to apply for the Air Traffic specializations are recommended to enrol "English language" as their first choice. This is, however, not a guarantee for being excepted in the project study.
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15J1A6	Foreign Language - English 6	Z	2
The students of the Faculty of Transportation Sciences study two foreign languages one after another at the Department of Humanities. These courses aim at providing sufficient knowledge to communicate about every-day matters but also to read and write and discuss professional and specialised issues.
 Both gradually chosen language courses are ended with an exam (at the end of 4th and 8th semester; the TL (Air Traffic Control) specialisation students take an English exam only - at the end of 4th semester; the PP (Professional Pilot) specialisation students take two exams in English - at the end of 4th and 6th semester). Those students who want to apply for the Air Traffic specializations are recommended to enrol "English language" as their first choice. This is, however, not a guarantee for being excepted in the project study.
 Our department provides courses in English, German, French and Russian at different levels. The courses are also taught in our multimedia laboratory.			
18SSP	Joints and Connecting Elements	Z,ZK	4
Screws and bolted assemblies, riveted joints, welding and brazing joints, adhesive bonding. Piping systems and components, pipe fittings, piping diagrams. Axles and shafts, axial locking devices. Tolerances and fits. Tolerancing of threads. Rolling bearings, mounting and arrangement of bearings, plain bearing units.			
20ELN	Electronics	Z,ZK	5
Properties of semiconductors, diodes, tranzistors, linear integrated circuits, operating amplifiers, technology of printed circuits.			
20ELT2	Electrotechnics 2	Z,ZK	4
Ohm's law, Kirchoff's law, resistance and its measurement. Performance, work and energy (kinetic, potential); principle and function of capacitors. Computation of capacity and voltage in parallel and serial circuits. Theory of magnetism, magnetomotoric force, inductivity, induction coil, mutual inductivity. Theory of DC-generator, DC-engine.			
20ELT3	Electrotechnics 3	Z,ZK	5
Production of alternating current. Alternating circuits with resistance, inductivity and capacity. Transformers, filters, alternating current generators and engines.			
21AVI1	Avionics 1	Z,ZK	5
21AVI2	Avionics 2	Z,ZK	5
21BPTL	Bachelor Thesis	Z	20
21EPS2	Elektronic Instrumentation 2	Z,ZK	4
21EPS3	Electronical Instruments Systems 3	Z,ZK	4
21FMS	Flight Management System	Z,ZK	5
21L2	Aircraft 2	Z,ZK	4
Aircraft body, landing gear, tail, directional stability and control, problems with projects, performance envelope, load factor, technologies used in aircraft construction, materials used in construction, fuel system, oil system, electric circuit, ice control system, anti-fire system, control systems.			
21LAN1	English in Aviation 1	Z	2
Students are expected to have perfectly passed the first block of English language. They will continue with the second block along with English in aviation.

\r\nEnglish in aviation A will introduce to the students basic terminology in the area of civil aviation. The lectures will be structured so one week the students go through the theory, special emphasis will be put on ability of students to receive information only in English. The next week will students use the theoretical knowledge in conversation and practical exercises? Audiovisual technology will also be used.			
21LRTC	Radio Technology in Aviation	Z,ZK	4
Electric signals and the wave spectrum, modulations - amplitude, frequency and phase, impulse modulation, resonance circuits, electromagnetic field, wave range in aviation, radiation and reception of electromagnetic field, antennas in aviation, receivers and transmitters, basic navigation parameters and their measurements, principles of measurements of angle navigation parameters, distance, altitude, speed, drift angle, hyperbolic navigation system, Earth's satellites, GPS, ground radio navigation systems, NDB, VOR, DVOR, TVOR, DME, ILS, MLS, radiolocation in aviation, monitors in aviation

\r\nThe lector of this subject has to have passed an exam at CAA following JAR - FCL 1.			
21PRX5	Training 5 - Specialisation Aviation Engineer	KZ	4
21PRX6	Training 6 - Specialisation Aviation Engineer	KZ	4
21PRX7	Training 7 - Specialisation Aviation Engineer	Z	10
Practical training within the outline stated in Reference manual on training of maintenance personnel.			
21PSU	Perspective Systems of Maintenance	Z,ZK	4
21PU3	Maintenance Procedures 3	KZ	5
21PU4	Maintenance Procedures 4	KZ	3
Systems of maintenance and repairs within the aeronautical technology and their application for ensuring high reliability and the required airworthiness. Subject content is in accordance with the required knowledge of JAR 66(module 7,part7.4 and 7.16 to 7.19).			
21PU5	Maintenance Procedures 5	KZ	3
Systems of maintenance and repairs within the aeronautical technology and their application for ensuring high reliability and the required airworthiness. Subject content is in accordance with the required knowledge of JAR 66 (module 7, part 7.20).			
21X17T	Project 7	KZ	3
21ZL2	Principles of Flight 2	Z,ZK	3
Creation of lift, propeller, propulsion, thrust, efficiency of engine, aerodynamics of fixed and variable pitch propeller, propeller regimes, effect of propeller airflow, gyroscopic effect, balance of forces during horizontal flight, glide descent and landing, performance, take off, climb, acceleration, positive load, maneuvers and turns, stability and controllability, transonic speeds.			

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

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