## Study plan

## Name of study plan: PIL bak.prez.19/20

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Technology in Transportation and Telecommunications Type of study: Bachelor full-time Required credits: 180 Elective courses credits: 0 Sum of credits in the plan: 180 Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 180 The role of the block: Z

Code of the group: 1.S.BPIL 19/20 Name of the group: 1.sem.PIL bak.prez.(studium od) 19/20 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 8 courses Credits in the group: 30 Note on the group:

#### Note on the group: Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester members) Tutors, authors and guarantors (gar.) Calculus 1 11CAL1 Z,ZK 7 2P+4C+22B Ζ Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.) Linear Algebra 11LA Z.ZK 3 2P+1C+10B Ζ Lucie Kárná, Pavel Provinský, Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.) Introduction to Transportation Engineering 12ZYDI Z.ZK 2 1P+1C 7 Vojt ch Novotný, Zuzana arská, Dagmar Ko árková 21TPLV Z,ZK 8 4P+4C Ζ Theory of the Pilot's Training 21UDVY Ζ Z,ZK 4 2P+2C Introduction to the Training of Aviation Personnel Geometry 11GIE ΚZ 3 2P+2C+12B Ζ Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.) Flight Training 1 21LPX1 ΚZ 2 0P+1C Z,L Roman Matyáš TV-1 Ζ Ζ 1 **Physical Education**

Role

Ζ

z

7

z

Ζ

7

Ζ

Z

#### Characteristics of the courses of this group of Study Plan: Code=1.S.BPIL 19/20 Name=1.sem.PIL bak.prez.(studium od) 19/20

11CAL1	Calculus 1	Z,ZK	1			
Sequence of real number	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-	dimensional Eukli	dean space and			
Cartesian coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several real variables.						
11LA	Linear Algebra	Z,ZK	3			
Vector spaces (linear co	mbinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and			
their applications. Scala	r product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.					
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2			
Role of transportation in	land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads	s, public mass trai	nsport. Negative			
impacts of transportatio	n to environment and safety.					
21TPLV	Theory of the Pilot's Training	Z,ZK	8			
Theoretical knowledge i	nstruction required for entry into the first phase of integrated training. Tuition refers to the syllabus provided in the CZ / ATO-0	10 manuals. Subj	ects and their			
minimum range is in acc	cordance with the requirements of EU regulation no. 1178/2011 and objects are numbered in accordance with Part FCL 010 t	o 090. The course	e is finished with			
unclassified assessment and examination. This course is intended only for long-term student, who are in integrated pilots training and study all courses related to Study field PIL						
(Professional Pilot) in all three years.						
21UDVY	Introduction to the Training of Aviation Personnel	Z,ZK	4			
Pilot training. History. Dr	ive. Meteorology. Airports. Navigation. Aircraft Design. Space technology. Practical training. Flying Rules. Airspace. Presentat	ion ATO. This cou	rse is intended			
only for long-term student, who are in integrated pilots training and study all courses related to Study field PI. (Professional Pilot) in all three years						

11GIE	Geometry	KZ	3			
Differential geometry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of the motion, the velocity, and						
acceleration of a particle	e moving on a curved path.					
21LPX1	Flight Training 1	KZ	2			
Practical exercises for ir	nprovement of theoretical knowledge in a range of at least PPL(A) of the objects 010 - 090 in accordance with Part FCL. The	basics of flight c	ontrol, dual			
exercises, solo flights and navigation flights. This course is intended only for long-term student, who are in integrated pilots training and study all courses related to Study field PIL						
(Professional Pilot) in all three years.						
TV-1	Physical Education	Z	1			

Code of the group: 2.S.BPIL 18/19 Name of the group: 2.sem.PIL bak.prez (od) 18/19 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 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
11CAL2	Calculus 2 Olga Vraštilová, Tomáš Tasák, Magdalena Hykšová, Ond ej Navrátil, Old ich Hykš <b>Ond ej Navrátil</b> Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C+20B	6 L	Z
11STAT	Statistics Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Natálie Blahitka, Ivan Nagy <b>Pavla Pecherková</b> Evženie Uglickich (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
21LIVO	Human Performance and Limitations	Z,ZK	5	2P+2C+14B	6 L	Z
21N	Navigation	ZK	4	4P+0C	L	Z
21PUPE	Instrumentation	ZK	4	4P+0C	L	Z
21ZYL1	Principles of Flight 1 Vladimír Machula	Z,ZK	5	2P+2C+16B	L	Z
21RTFS	Radiotelephony and Communication	KZ	2	1P+1C	L	Z
TV-2	Physical Education	Z	1		L	Z

#### Characteristics of the courses of this group of Study Plan: Code=2.S.BPIL 18/19 Name=2.sem.PIL bak.prez (od) 18/19

Indefinite integral, Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Param							
Indefinite integral, Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Parametric description of regular							
k-dimensional surfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary differential equations of the first							
order, linear differential equations with constant coefficients and its systems							
11STAT Statistics Z	,ZK	4					
Basics of probability Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametric te	sts Nonpa	rametric tests					
Regression and correlation analysis							
21LIVO Human Performance and Limitations 2	,ZK	5					
Human performace & amp; limitations, aptibility & amp; competence, accident statistics, flight safety, basics of flight physiology, man & amp; environment, bre	athing &ar	np; circulation,					
sensory system, health & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, memory	& lea	arning, theory					
& model of human error, body rhythms & sleep, stress, fatigue, working methods.							
21N Navigation	ZK	4					
Earth - shape, dimensions of the reference ellipsoid and geoid, position reference system (grid), large and small circles. Great-circle distance and the rhumb lir	e. Conver	gence. Spherical					
trigonometry. Mathematical determination of elements rhumb line course and Great-circle distance. Agona, isogona. Projection of maps. ICAO and Jeppesor	maps. Tin	nes - UTC, Zulu,					
LT. Time zones. Comparative navigation. Dead reckoning. INS / IRS, FMS.							
21PUPE Instrumentation	ZK	4					
Basic classification and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measurem	ent of air o	data parameters.					
Earth's magnetic field, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, monitorin	g and reco	ording systems,					
integrated instrument systems.							
21ZYL1 Principles of Flight 1 Z	,ZK	5					
Aerodynamic drag, relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and press	res aroun	d wing, angle of					
attack, reactions of wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced dra	g, interfere	ence, devices for					
lift and drag increase.							
21RTFS Radiotelephony and Communication	κΖ	2					
VFR and IFR communication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio-communication in normal and							
emergency procedures, loss of communication, weather information, HF communication.							
TV-2 Physical Education	Z	1					

Code of the group: 3.S.BPIL 19/20 Name of the group: 3.sem.PIL bak.prez.(od) 19/20 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 8 courses Credits in the group: 30

#### Note on the group: Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their Code Completion Credits Scope Semester Role members) Tutors, authors and guarantors (gar.) Physics 11FYZ Z,ZK 5 2P+2C+18B Ζ Z Old ich Hykš, Zuzana Malá, Tomáš Vít, Jana Kuklová Zuzana Malá Zuzana Malá (Gar.) **Human Factors in Aviation** Ζ 21LCVL ΖK 2 2P+0C 7 Lenka Hanáková Lenka Hanáková **Electronics Basics 1** 21ZEL1 Z,ZK 5 3P+2C Ζ Ζ Vít Fábera Vít Fábera Principles of Flight 2 21ZYL2 Z,ZK 5 2P+2C Ζ Z P emysl Vávra, Marek Veselý P emysl Vávra 21MEO1 2P+2C Ζ ΚZ 4 7 Meteorology 1 **Basics of Aircraft Structures and Systems** 21ZLKS ΚZ 4 2P+2C Ζ z Kate ina Stuchlíková, Pavol Hajla Pavol Hajla 21LRF Ζ 2 0P+2C Ζ Ζ Laboratories of Radiotelephony Foreign Language - English 1 Ζ Ζ 15JZ1A Markéta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková, ..... 3 0P+4C+10B Ζ

#### Characteristics of the courses of this group of Study Plan: Code=3.S.BPIL 19/20 Name=3.sem.PIL bak.prez.(od) 19/20

11FYZ Physics	Z,ZK	5				
Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.						
21LCVL Human Factors in Aviation	ZK	2				
Human performace & amp; limitations, aptibility & amp; competence, accident statistics, flight safety, basics of flight physiology, man & amp; environme	ent, breathing &ar	np; circulation,				
sensory system, health & amp; hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, memory & amp; learning, theory						
& model of human error, body rhythms & sleep, stress, fatigue, working methods.						
21ZEL1 Electronics Basics 1	Z,ZK	5				
Electron theory. Static electricity, electrical conductivity and terminology. Production of electricity and the DC power source. DC Circuits. Electrical resi	stance, resistor a	nd performance.				
Capacity and capacitor. Magnetism. Inductance and inductor. DC motors and generators. Theory AC, resistive, capacitive, inductive circuits. Transform	mers. Brushless r	notors and				
generators. Frequency filters.						
21ZYL2 Principles of Flight 2	Z,ZK	5				
Static & amp; dynamic longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & a	np; lateral stability	, control – pitch				
(longitudinal), yaw (directional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critica	l Mach number, a	aerodynamic				
heating, operating limitations, manoeuvring envelope, gust-load diagram.						
21MEO1 Meteorology 1	KZ	4				
Composition, size and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, turbulence, jet streams	and standing way	ves. Moisture				
adiabatic processes. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, frontal interface. Distribution of pressure, cyclones, ar	nticyclones, non-f	rontal cyclone.				
21ZLKS Basics of Aircraft Structures and Systems	KZ	4				
Basics of screening, technical drawing, technological and operational signs. Hydraulic, pneumatic, fuel, electricity and block diagrams in aviation.						
21LRF Laboratories of Radiotelephony	Z	2				
VFR and IFR communication, basic opertional procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio-communication in normal and						
emergency procedures, loss of communication, weather information, HF communication.						
15JZ1A Foreign Language - English 1	Z	3				
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary						
stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.						

Code of the group: 4.S.BPIL 16/17 Name of the group: 4.sem.PIL bak.prez. (od) 16/17 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 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
11MSP	Modeling of Systems and Processes Bohumil Ková , Lucie Kárná, Jana Kuklová Jana Kuklová Bohumil Ková (Gar.)	Z,ZK	4	2P+2C+12B	L	Z
21HVL	Weight and Balance of Aircraft Denisa Svobodová	Z,ZK	4	2P+1C	L	Z
21MET2	Meteorology 2 Iveta Kameníková Iveta Kameníková	Z,ZK	5	2P+2C	L,Z	Z
21RNG	Radionavigation	Z,ZK	7	3P+4C	L	Z
21LL1	Aircraft 1	KZ	3	2P+1C+10B	L	Z

Flight Training 2 Roman Matyáš, Jakub Charezinski <b>Roman Matyáš</b>	KZ	L,Z	z				
Aircraft Maintenance Tomáš Parýzek	Z	2	2P+0C+8B	L	Z		
15JZ2A Foreign Language - English 2 Markéta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,					Z		
e courses of this group of Study Plan: Code=4.S.BPIL 16/17 Nat	me=4.sem.PI	L bak.p	rez. (od) 1	6/17			
odeling of Systems and Processes			Z	,ZK	4		
ernal and internal system description, continuous and discrete system, mathematics as a	tool, examples of	formulatior	of differentia	and differe	ential equations.		
n, stationary and non-stationary system, causality. Convolutional integral. Laplace and 2	Z transformations	Transfer fu	unction. Stabi	ity of LTI s	ystems.		
systems. System interconnection.							
eight and Balance of Aircraft			Z	.ZK	4		
0	aft, standard weig	hts of pass	1	· I	v, determination		
imentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, in	nfluence of centre	of gravity	position on a	rcarft perfo	ormance.		
eteorology 2			Z	.ZK	5		
	rstorms, tornadoe	s, flying in	the stratosph	ere, mount	ain areas,		
na. Observation, weather maps, important information for flight planning.			•				
adionavigation			Z	,ZK	7		
F), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SS	SR and transpond	er. Radar u	1		during the flight.		
eneral philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME	(RNAV). Autopilo	t and flight	director. Sate	ellite naviga	ation, systems		
rcraft 1				ΚZ	3		
ptual design types - definitions and basic knowledge of the problem. Development of re	quirements, aircr	aft definitio	ns and categ	orisation. A	ircraft loadings.		
ondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aerop	lane topics.						
ght Training 2				ΚZ	2		
wement of theoretical knowledge in a range MEP land and IFR from the relevant subje	cts in accordance	with Part I	FCL. The bas	ics of instru	ument flying,		
procedures, descents and navigation flights. This course is intended only for long-term	student, who are	in integrate	ed pilots traini	ng and stu	dy all courses		
rofessional Pilot) in all three years.							
craft Maintenance				Z	2		
nical operations. Maintenance and work processes. Defects search methods, status che	ck diagnostic tool	s. Selectior	n and qualifica	ation of avia	ation personnel.		
Basic documentation for maintenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part 145. Human factors of aircraft maintenance. Regulation of director							
ce. Seminars will be focused on practical application.				-			
reign Language - English 2			Z	,ZK	3		
style. Selection of conversation topics relating to transportation sciences. Extending voca	abulary, developin	g perceptiv	/e and comm	unicative sk	ills. Elementary		
tten presentation of original research. Academic text principles and reading compreher	nsion. Principles o	of rhetoric.					
	Roman Matyáš, Jakub Charezinski Roman Matyáš         Aircraft Maintenance Tomáš Parýzek         Foreign Language - English 2 Markét Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,         e courses of this group of Study Plan: Code=4.S.BPIL 16/17 Nato odeling of Systems and Processes         rnal and internal system description, continuous and discrete system, mathematics as a la, stationary and non-stationary system, causality. Convolutional integral. Laplace and 2 systems. System interconnection.         eight and Balance of Aircraft ance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircrimentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, i eteorology 2 atology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunde ia. Observation, weather maps, important information for flight planning.         dionavigation (Totaft 1)       Popular Mongues and equipment, indication and sensors for RNAV, VOR/DME         craft 1       pupula design types - definitions and basic knowledge of the problem. Development of re ondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aerop ght Training 2         vement of theoretical knowledge in a range MEP land and IFR from the relevant subje procedures, descents and navigation flights. This course is intended only for long-term ofessional Pilot) in all three years.         craft Maintenance incla operations. Maintenance and work processes. Defects search methods, status che intenance. Optimization of time maintenance intervals. Regulation no. 1321/2014 Part ce. Seminars will be focused on practi	Roman Matyáš, Jakub Charezinski Roman Matyáš         INC           Aircraft Maintenance Tomáš Parýzek         Z           Foreign Language - English 2 Markéta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,         Z,ZK           e courses of this group of Study Plan: Code=4.S.BPIL 16/17 Name=4.sem.Pl odeling of Systems and Processes rnal and internal system description, continuous and discrete system, mathematics as a tool, examples of n, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. systems: System interconnection.           Sight and Balance of Aircraft ance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weig mentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre tecorology 2 atology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoe i.a. Observation, weather maps, important information for flight planning.           dionavigation - D, ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transpond ineral philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilo craft 1 ptual design types - definitions and basic knowledge of the problem. Development of requirements, aircra ondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics. ght Training 2 vement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance oreders, descents and navigation flights. This course is intended only for long-term student, who are ofessional Pilot) in all three years. craft Maintenance mean terminetance intervals. Regulation	Roman         Matyáš, Jakub         Charezinski         Roman         Matyáš         INC         Z           Aircraft         Maircraft         Maintenance Tomáš         Z         2         2           Foreign         Language - English 2 Markéta         Vojanová, Dana         Boušová, Marie         Markéta         X,ZK         3           Tome ek, Jan Feit, Markéta         Musiková, Peter         Morpuss, Lenka         Monková,         Z,ZK         3           e courses of this group of Study Plan:         Code=4.S.BPIL 16/17         Name=4.sem.PIL bak.pr           bdeling of Systems and Processes         rnal and internal system description, continuous and discrete system, mathematics as a tool, examples of formulatior           stationary and non-stationary system, causality. Convolutional integral.         Laplace and Z transformations. Transfer fisystems. System interconnection.           sight and Balance of Aircraft         mene, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of pass mentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity           etcorology 2         atology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in a.           observation, weather maps, important information for flight planning.         dionavigation           or, ADF VOR and Doppler VOR, DME, ILS, MLS, grou	Roman Matyáš, Jakub Charezinski Roman Matyáš       IN2       2       01 FTC         Aircraft Maintenance Tomáš Parýzek       Z       2       2P+0C+68         Foreign Language - English 2 Markéta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Lenka Monková,       Z,ZK       3       0P4C+10B         Pocurses of this group of Study Plan: Code=4.S.BPIL 16/17 Name=4.sem.PIL bak.prez. (od) 1       1         deling of Systems and Processes       Z         rnal and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential s, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stabil systems. System interconnection.       Z         sight and Balance of Aircraft       Z       Z         unce, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, baggat mentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity position on ai tecorology 2       Z         atology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the stratosph a. Observation, weather maps, important information for flight planning.       Z         dionavigation       Z       Z       L         y. ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization for uner	Roman Matyáš, Jakub Charezinski Roman Matyáš       N.2       2       01 P10       L/2         Aircraft Maintenance Tomáš Parýzek       Z       2       2P+0C+88       L         Foreign Language - English 2 Markáta Vojanová, Dana Boušová, Marie Michlová, Barbora Horá ková, Marek Tome ek, Jan Feit, Markéta Musiková, Peter Morpuss, Lenka Monková,       Z,ZK       3       0P+4C+108         e courses of this group of Study Plan: Code=4.S.BPIL 16/17 Name=4.sem.PIL bak.prez. (od) 16/17       Ddeling of Systems and Processes       Z,ZK       3       0P+4C+108         vationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI systems: System interconnection.       SzzK       Z,ZK       Z         sight and Balance of Aircraft       Z,ZK       Z,ZK       Z,ZK       Z         ince, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, baggage and creve mentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity position on aircaft petitot eteorology 2       Z,ZK       Z         dionavigation       Z,ZK       Z,ZK       Z<		

## Code of the group: 5.S.BPIL 19/20

Name of the group: 5.sem.PIL bak.prez.(od) 19/20

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 7 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
21LCM	Aircraft Engines Daniel Hanus, Tomáš Parýzek Daniel Hanus	Z,ZK	3	2P+1C	Z,L	Z
21LGPS	Legislation and Operational Regulations	Z,ZK	8	4P+2C	Z	Z
21LTA2	Aircraft 2 Karel Mündel Karel Mündel	Z,ZK	2	2P+1C	Z	Z
21VL	Aircraft Performance Denisa Svobodová Denisa Svobodová	Z,ZK	4	2P+2C	Z	Z
21ZLS	ATM Systems Vladimír Machula Vladimír Machula	Z,ZK	5	2P+2C	Z	Z
21PDLT	Airport Design and Operation Ladislav Capoušek	KZ	5	2P+2C	Z	Z
21APL1	Aviation English 1 for Professional Pilot Lukáš Zibner, Marek Šudoma Lukáš Zibner	Z	3	0P+4C	Z	Z

#### Characteristics of the courses of this group of Study Plan: Code=5.S.BPIL 19/20 Name=5.sem.PIL bak.prez.(od) 19/20

21LCM	Aircraft Engines	Z,ZK	3			
Aircraft piston engine, theoretical background, operational characteristics and construction schemes. Propellers, operational characteristics. Turbine engine, theoretical background,						
thermal cycles, construe	ction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational	characteristics. Er	igine control.			
21LGPS	Legislation and Operational Regulations	Z,ZK	8			
Introduction into aviation	Introduction into aviation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Annexes 1-19, ICAO Docs. 4444,					
7030, 8168, analyses and interpretation of the European Parliament and Council Regulations (EC), European Commission Regulations (EU) and the Decisions of the Executive Director						
of EASA.						

21LTA2	Aircraft 2	Z.ZK	2		
	bility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national	· ·	solidity of aircraft		
structures. Aeroelasticit	y. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.				
21VL	Aircraft Performance	Z,ZK	4		
Basic terms of aircraft p	erformance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft	performance clas	s A, take off and		
landing performance, at	ter take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS.				
21ZLS	ATM Systems	Z,ZK	5		
The course introduces of	assical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions	as far as		
communication, navigat	ion and surveillance aviation systems are concerned.				
21PDLT	Airport Design and Operation	KZ	5		
Methods for the new airp	orts design. Existing airports development. A closer look at the development of the airports operational areas. Certification of the	ne operating areas	and procedures		
by ICAO Airports Manual. Development planning and project preparation, regulatory basis.					
21APL1	Aviation English 1 for Professional Pilot	Z	3		
Exercises focused on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft construction, principles of flight, aircraft					
engines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators procedures.					
<b>-</b>					

### Code of the group: 6.S.BPIL 20/21

## Name of the group: 6.sem.PIL bak.prez. (od) 20/21

## 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 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
21APL2	Aviation English 2 for Professional Pilot Lukáš Zibner, Marek Šudoma	Z,ZK	3	0P+4C	L	Z
21EBLP	European Air Transport Safety Attitude	Z,ZK	4	2P+2C	L	Z
21PAP	Flight Planning and Performance Ladislav Capoušek Anna Polánecká (Gar.)	Z,ZK	4	2P+2C+14B	L	Z
21PPLP	Operational Procedures and IFR Flights	Z,ZK	7	4P+2C	L	Z
21ZDP	Knowledge, Skills and Attitudes	Z,ZK	5	2P+2C	L	Z
21DKL	Aviation Data Link Communication Vladimír Machula, Jakub Steiner, Stanislav Pleninger	KZ	3	2P+1C	L	Z
21LPX3	Flight Training 3 Roman Matyáš	KZ	2	0P+1C	L	Z
21LVP	MCC - Multicrew Cooperation	Z	2	2P+0C	L	Z

#### Characteristics of the courses of this group of Study Plan: Code=6.S.BPIL 20/21 Name=6.sem.PIL bak.prez. (od) 20/21

21APL2	Aviation English 2 for Professional Pilot	Z,ZK	3				
Exercises focused on re	petition and smoother communication within VFR and IFR communication, communication with technical staff at the airport,	a fluent conversa	ation within the				
airlines.							
21EBLP	European Air Transport Safety Attitude	Z,ZK	4				
Reliability and life cycle systems, reliability theory, mathematics tools for reliability, reliability analysis, maintenance systems, theory of operational safety and quality, the basic concept							
of security, safety mana	gement, security management strategy, hazard, risk, risk management.						
21PAP	Flight Planning and Performance	Z,ZK	4				
Mass and balance. Load	of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characterist	ic speeds. Runwa	y characteristics.				
Take off and landing pe	rformance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FP	L. Aerodrom oper	ration minimums.				
Fuel plan. Operational f	light plan.						
21PPLP	Operational Procedures and IFR Flights	Z,ZK	7				
Documentation Jeppes	en. IFR approach segments. Precision approach ILS/PAR, MLS. Low Visibility Operation (LVO). Non precision approach - ILS	without GP, VOR	/DME, NDB and				
SRA. Airport's operation	nal minima. Circuit approach. Holding patterns, SID and STAR. GNSS approach. Altimeter setting procedures. IFR flight proced	lures. RNAV appr	oach procedures				
and other operation. CE	VFA procedures and principles of increasing airspace capacity.						
21ZDP	Knowledge, Skills and Attitudes	Z,ZK	5				
Communication. Manag	ement of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness. V	Vorkload manage	ement. Upset				
preventation and recover	ery training. Mental math.						
21DKL	Aviation Data Link Communication	KZ	3				
21LPX3	Flight Training 3	KZ	2				
Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge							
21LVP	MCC - Multicrew Cooperation	Z	2				
Flight safety analysis in	Flight safety analysis in relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situational awareness, decision making						
process, communication	process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation.						

# List of courses of this pass:

Code	Name of the course	Completion	Credits
11CAL1	Calculus 1	Z,ZK	7
	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dim		-
	an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of sev		
11CAL2	Calculus 2 Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	Z,ZK	5 n of regular
-	faces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary diff	-	-
	order, linear differential equations with constant coefficients and its systems		
11FYZ	Physics	Z,ZK	5
11015	Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	KZ	2
11GIE Differential geome	Geometry try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajectory o		3 elocity and
	acceleration of a particle moving on a curved path.	i ule illeuell, ule i	oroony, and
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the		minants and
11MSP	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications.	-	4
	Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differe	Z,ZK	4 al equations
	inear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function		-
	Discretization of continuous systems. System interconnection.		
11STAT	Statistics	Z,ZK	4
Basics of probabil	ty Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Paramet Regression and correlation analysis	ric tests Nonparan	netric tests
12ZYDI	Introduction to Transportation Engineering	Z,ZK	2
	on in land-use planning. Basic terms in transportation engineering. Traffic survey and traffic prognosis. Introduction to topic of roads, p		
	impacts of transportation to environment and safety.		
15JZ1A	Foreign Language - English 1	Z	3
Grammatical Struct	ures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		Elementary
15JZ2A	Foreign Language - English 2	Z,ZK	3
	ares and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	, ,	
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of		
21APL1	Aviation English 1 for Professional Pilot d on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft constructio	Z	3 ht. aircraft
	ingines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators		ni, ancian
21APL2	Aviation English 2 for Professional Pilot	Z,ZK	3
Exercises focused	on repetition and smoother communication within VFR and IFR communication, communication with technical staff at the airport, a	fluent conversatior	within the
		1/7	0
21DKL	Aviation Data Link Communication	KZ	3
21EBLP Reliability and life c	European Air Transport Safety Attitude ycle systems, reliability theory, mathematics tools for reliability, reliability analysis, maintenance systems, theory of operational safety	Z,ZK	-
	of security, safety management, security management strategy, hazard, risk, risk management.		loio concept
21HVL	Weight and Balance of Aircraft	Z,ZK	4
	and balance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, ba		
21LCM	t, flight documentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity positive Aircraft Engines	on on aircant perio	rmance. 3
	ine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en	, ,	
	onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational ch	-	-
21LCVL	Human Factors in Aviation	ZK	2
	e & amp; limitations, aptibility & amp; competence, accident statistics, flight safety, basics of flight physiology, man & amp; environment		
sensory system, r	ealth & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me & model of human error, body rhythms & sleep, stress, fatigue, working methods.	anory damp, learn	ing, theory
21LGPS	Legislation and Operational Regulations	Z,ZK	8
Introduction into a	viation regulations. The scope of international and national organizations in civil aviation. Analysis and interpretation of the ICAO Ann	exes 1-19, ICAO E	ocs. 4444,
7030, 8168, analyse	es and interpretation of the European Parliament and Council Regulations (EC), European Commission Regulations (EU) and the Deci of EASA.	isions of the Execu	tive Director
21LIVO	Human Performance and Limitations	Z,ZK	5
	e & limitations, aptibility & competence, accident statistics, flight safety, basics of flight physiology, man & environment		
sensory system, h	ealth & hygiene, health preservation, intoxication, incapacitation, basics of flight psychology, human information processing, me & model of human error, body rhythms & sleep, stress, fatigue, working methods.	emory & learn	ing, theory
21LL1	Aircraft 1	KZ	3
	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca	1	
	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic	-	-

	Flight Training 1	KZ	2
	es for improvement of theoretical knowledge in a range of at least PPL(A) of the objects 010 - 090 in accordance with Part FCL. The	1	
	ights and navigation flights. This course is intended only for long-term student, who are in integrated pilots training and study all cours		
1	(Professional Pilot) in all three years.		
21LPX2	Flight Training 2	KZ	2
	s for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. Th	1 1	
	nergency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated pilots		
	related to Study field PIL (Professional Pilot) in all three years.	5,	
21LPX3	Flight Training 3	KZ	2
216173	Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowl	1 1	2
21LRF	Laboratories of Radiotelephony	Z	2
	nunication, basic opertional procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio	1 1	
	emergency procedures, loss of communication, weather information, HF communication.		normai anu
041 74 0		774	
21LTA2	Aircraft 2	Z,ZK	2
wanutacturers res	ponsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national star		ty of aircraft
	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu		
21LVP	MCC - Multicrew Cooperation	Z	2
Flight safety analys	sis in relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situation	al awareness, decis	sion making
	process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation.		
21MEO1	Meteorology 1	KZ	4
	e and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, turbulence, jet streams a	-	
adiabatic process	es. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, frontal interface. Distribution of pressure, cyclones, antio	cyclones, non-front	al cyclone.
21MET2	Meteorology 2	Z,ZK	5
Climatic zones,	tropical climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the str	ratosphere, mounta	ain areas,
	reducing visibility phenomena. Observation, weather maps, important information for flight planning.		
21N	Navigation	ZK	4
Earth - shape, dime	nsions of the reference ellipsoid and geoid, position reference system (grid), large and small circles. Great-circle distance and the rhum	b line. Convergenc	e. Spherical
trigonometry. Math	ematical determination of elements rhumb line course and Great-circle distance. Agona, isogona. Projection of maps. ICAO and Jeppe	eson maps. Times -	UTC, Zulu,
	LT. Time zones. Comparative navigation. Dead reckoning. INS / IRS, FMS.		
21PAP	Flight Planning and Performance	Z,ZK	4
	Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic s		aracteristics.
	g performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. A		
	Fuel plan. Operational flight plan.	·	
21PDLT	Airport Design and Operation	KZ	5
	w airports design. Existing airports development. A closer look at the development of the airports operational areas. Certification of the o	1 1	-
	by ICAO Airports Manual. Development planning and project preparation, regulatory basis.	porating aroad and	procoduroo
21PPLP	Operational Procedures and IFR Flights	Z.ZK	7
	ppesen. IFR approach segments. Precision approach ILS/PAR, MLS. Low Visibility Operation (LVO). Non precision approach - ILS wit		•
	rational minima. Circuit approach. Holding patterns, SID and STAR. GNSS approach. Altimeter setting procedures. IFR flight procedure		
	and other operation. CDFA procedures and principles of increasing airspace capacity.		procedures
21PUPE			
		74	1
I Hasis classification		ZK	4
	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured	urement of air data	parameters.
	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu ield, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moni	urement of air data	parameters.
Earth's magnetic f	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu ield, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moni integrated instrument systems.	urement of air data p itoring and recordin	parameters. Ig systems,
Earth's magnetic f	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu ield, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moni integrated instrument systems. Radionavigation	urement of air data r itoring and recordin	parameters. ig systems,
Earth's magnetic f 21RNG Ground direction fi	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu ield, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moni integrated instrument systems. Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization	urement of air data itoring and recordin Z,ZK for navigation durir	parameters. g systems, 7 ng the flight.
Earth's magnetic f 21RNG Ground direction fi	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu ield, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moni integrated instrument systems. Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director	urement of air data itoring and recordin Z,ZK for navigation durir	parameters. g systems, 7 ng the flight.
Earth's magnetic f 21RNG Ground direction fi Area navigation (F	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu ield, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moni integrated instrument systems. Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.	irement of air data itoring and recordin Z,ZK for navigation durir r. Satellite navigatio	7 ng the flight. n, systems
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, monintegrated instrument systems.  Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication	irement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ	7 ng the flight. n, systems
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, monintegrated instrument systems.  Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio	irement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ	7 ng the flight. n, systems
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, monintegrated instrument systems.  Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.	irement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ -communication in	parameters. g systems, 7 ng the flight. n, systems 2 normal and
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr 21TPLV	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, monintegrated instrument systems.  Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.  Theory of the Pilot's Training	iterement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ -communication in Z,ZK	parameters. g systems, 7 ng the flight. n, systems 2 normal and 8
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr 21TPLV Theoretical know	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moninger (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.  Theory of the Pilot's Training edge instruction required for entry into the first phase of integrated training. Tuition refers to the syllabus provided in the CZ / ATO-010	iterement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ -communication in Z,ZK 0 manuals. Subject:	parameters. g systems, 7 ng the flight. n, systems 2 normal and 8 s and their
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr 21TPLV Theoretical know	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured, magnetic compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, monintegrated instrument systems.  Radionavigation nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.  Theory of the Pilot's Training	iterement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ -communication in Z,ZK 0 manuals. Subject:	parameters. g systems, 7 ng the flight. n, systems 2 normal and 8 s and their
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr 21TPLV Theoretical knowl minimum range is	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured integrated instruments, radio-navigational systems, radars, moninger compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moninger distrument systems.  Radionavigation  nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.  Theory of the Pilot's Training edge instruction required for entry into the first phase of integrated training. Tuition refers to the syllabus provided in the CZ / ATO-010 n accordance with the requirements of EU regulation no. 1178/2011 and objects are numbered in accordance with Part FCL 010 to 0 essment and examination. This course is intended only for long-term student, who are in integrated pilots training and study all course	irement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ -communication in Z,ZK 0 manuals. Subject 90. The course is fi	parameters. g systems, 7 ng the flight. n, systems 2 normal and 8 s and their inished with
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr 21TPLV Theoretical knowl minimum range is unclassified ass	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured integrated instruments, radio-navigational systems, radars, monintegrated instrument systems.  Radionavigation  nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.  Radiotelephony and Communication  nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.  Theory of the Pilot's Training edge instruction required for entry into the first phase of integrated training. Tuition refers to the syllabus provided in the CZ / ATO-010 n accordance with the requirements of EU regulation no. 1178/2011 and objects are numbered in accordance with Part FCL 010 to 0 essment and examination. This course is intended only for long-term student, who are in integrated pilots training and study all cours (Professional Pilot) in all three years.	irement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ D-communication in Z,ZK 0 manuals. Subject 190. The course is fi res related to Study	parameters. g systems, 7 ng the flight. n, systems 2 normal and 8 s and their inished with
Earth's magnetic f 21RNG Ground direction fi Area navigation (F 21RTFS VFR and IFR comr 21TPLV Theoretical knowl minimum range is	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measured integrated instruments, radio-navigational systems, radars, moninger compass, gyroscopic instruments, inertial navigation and reference systems, radio-navigational systems, radars, moninger distrument systems.  Radionavigation  nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization and backups.  Radiotelephony and Communication nunication, basic operational procedures, standard aeronautical frazeology, broadcasting of the numbers, letters, etc., call signs, radio emergency procedures, loss of communication, weather information, HF communication.  Theory of the Pilot's Training edge instruction required for entry into the first phase of integrated training. Tuition refers to the syllabus provided in the CZ / ATO-010 n accordance with the requirements of EU regulation no. 1178/2011 and objects are numbered in accordance with Part FCL 010 to 0 essment and examination. This course is intended only for long-term student, who are in integrated pilots training and study all course	irement of air data r itoring and recordin Z,ZK for navigation durir r. Satellite navigatio KZ -communication in Z,ZK 0 manuals. Subject 90. The course is fi	parameters. g systems, 7 ng the flight. n, systems 2 normal and 8 s and their inished with
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21ZEL1	Electronics Basics 1	Z,ZK	5
Electron theory. Stat	ic electricity, electrical conductivity and terminology. Production of electricity and the DC power source. DC Circuits. Electrical resistant	nce, resistor and p	erformance.
Capacity and cap	pacitor. Magnetism. Inductance and inductor. DC motors and generators. Theory AC, resistive, capacitive, inductive circuits. Transform	ners. Brushless m	otors and
	generators. Frequency filters.		
21ZLKS	Basics of Aircraft Structures and Systems	KZ	4
B	asics of screening, technical drawing, technological and operational signs. Hydraulic, pneumatic, fuel, electricity and block diagrams	in aviation.	
21ZLS	ATM Systems	Z,ZK	5
The course intro	duces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions	as far as
	communication, navigation and surveillance aviation systems are concerned.		
21ZYL1	Principles of Flight 1	Z,ZK	5
Aerodynamic drag, i	relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pr	essures around w	ing, angle of
attack, reactions of v	wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced	drag, interference	e, devices for
	lift and drag increase.		
21ZYL2	Principles of Flight 2	Z,ZK	5
Static & amp; dynam	nic longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & amp;	lateral stability, co	ontrol – pitch
(longitudinal), yaw	(directional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical	Mach number, ae	rodynamic
	heating, operating limitations, manoeuvring envelope, gust-load diagram.		
TV-1	Physical Education	Z	1
1 1 1			

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2024-05-17, time 11:23.