Study plan

Name of study plan: Bachelor PIL (CS) Full-Time from 2022/23

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Professional Pilot 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: 170

The role of the block: Z

Code of the group: 1S-BP-PIL-CS-22/23

Calculus 1

Name of the group: 1st Sem. Bachelor Full-Time PIL (CS) from 2022/23 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 6 courses

Credits in the group: 30 Note on the group:

11CAL1

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
11CAL1	Calculus 1 Tomáš T asák, Olga Vraštilová, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	Z	Z
11LA	Linear Algebra Magdalena Hykšová, Lucie Kárná, Pavel Provinský, Martina Be vá ová Magdalena Hykšová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
210BN	General Navigation Jan Slezá ek Radoslav Zozu ák	ZK	5	4P+0C	Z	Z
21TVFR	Theory for VFR Training Ladislav Capoušek	Z,ZK	8	4P+4C	Z	Z
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12B	Z	Z
21SVFR	VFR Communication	Z	4	2P+1C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=1S-BP-PIL-CS-22/23 Name=1st Sem. Bachelor Full-Time PIL (CS) from 2022/23

Z,ZK

7

Sequence of real numb	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton in	tegral, Riemann ir	ntegral, improper
Riemann integral. First-	order differential equations, linear differential equations.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (linear c	ombinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and	their solvability. D	eterminants and
their applications. Scala	ar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.		
210BN	General Navigation	ZK	5
The Earth: latitude and	longitude. Reference systems. Circles on the Earth and distance. Calculations. Time. Magnetism and sirections. Wind and Sp	eed: Course, hea	ding, track.
Calculations: navigation	n computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR nav	rigation. Nav Log	preparation and
use. Navigation display	Navigation in remote and oceanic areas.		
21TVFR	Theory for VFR Training	Z,ZK	8
Course content is base	d on PPL(A) theory requirements according to Part-FCL. Lectures cover topics that are necessary to commence the practical	part of ATP(A) tr	aining, such as
principles of flight, airfra	ame and powerplant, aircraft systems, instrumentation, mass and balance, performance, air law and ATC procedures, meteor	ology, operationa	l procedures,
navigation, radionaviga	tion, VFR communication, flight planning and monitoring and human factor.		

11GIE Geometry

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 moving on a curved path.

21SVFR VFR Communication

Course contents are based on PART FCL, part 090. It defines terms and abbreviations used in VFR communication. Phraseology and procedures in standard and non-standard situations.

Code of the group: 2S-BP-PIL-CS-22/23

Name of the group: 2nd Sem. Bachelor Full-Time PIL (CS) from 2022/23 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 10 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 Magdalena Hykšová	Z,ZK	5	2P+3C+20B	L	Z
11STAT	Statistics	Z,ZK	4	2P+2C+12B	L	Z
21HAV	Weight and Balance of Aircraft	Z,ZK	3	2P+2C	L	Z
21LDA1	Aircraft 1	Z,ZK	3	2P+1C	L	Z
21PRJ1	Instrumentation 1 Pavel Hovorka Jakub Hospodka (Gar.)	ZK	2	2P+0C	L,Z	Z
21ZKL1	Principles of Flight 1 Vladimír Socha (Gar.)	ZK	3	2P+1C	L	Z
21CON	Navigation Calculations	KZ	2	0P+2C	L	Z
21LPX1	Flight Training 1	KZ	2	0P+1C	Z,L	Z
21LTP1	Air Law 1	KZ	3	3P+0C	L	Z
15JZ1A	Foreign Language - English 1 Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Jitka He manová, Eva Rezlerová Lenka Monková (Gar.)	Z	3	0P+4C+10B	Z	Z

Characteristics of the courses of this group of Study Plan: Code=2S-BP-PIL-CS-22/23 Name=2nd Sem. Bachelor Full-Time PIL (CS) from 2022/23

11CAL2	Calculus 2	Z,ZK	5
Linear differential e	quations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface	integrals.	
11STAT	Statistics	Z,ZK	4
Basics of probability	Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Par	ametric tests Nonpa	rametric tests
Regression and cor	relation analysis		
21HAV	Weight and Balance of Aircraft	Z,ZK	3
Basic terms of mas	s and balance, basic aircraft masses, weighing and maximum aircraft masses, overloading, standard weights of passenger, ba	ggage and crew, de	termination of
aircraft load, flight of	ocumentation - loadsheet, trimsheet, load securing, determination of centre of gravity, influence of centre of gravity on the airc	raft performance	
21LDA1	Aircraft 1	Z,ZK	3
Aircraft structural ar	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions	and categorisation.	Aircraft loadings
Systems of primary	and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.		
21PRJ1	Instrumentation 1	ZK	2
Basic construction	principles of instrumentation, electronic displays, basics of measurement - sensitivity and errors, engine instrumentation (press	ure gauges, thermo	meters, fuel
quantity and fuel flo	w measurement, torque and EPR measurement), indication in other aircraft systems (position, fire and icing indication, vibration,	n monitoring, press	urisation syster
monitoring, aerome	tric instruments (sensors, altimeter, air speed indicator, VSI, ADC).		
21ZKL1	Principles of Flight 1	ZK	3
Aerodynamic drag,	relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow a	nd pressures aroun	d wing, angle o
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, in	duced drag, interfere	ence, devices for
lift and drag increas	e.		
21CON	Navigation Calculations	KZ	2
Projection of maps;	times - UTC, Zulu, LT; positioning; sunrise and sunset; distance calculation; projection; maps and symbols; declination; speed;	wind components a	and wind drift;
VFR route selection	; position plotting.		
21LPX1	Flight Training 1	KZ	2
Practical exercises	for improvement of theoretical knowledge in a range of at least PPL(A) of the objects 010 - 090 in accordance with Part FCL. T	he basics of flight co	ontrol, dual
exercises, solo fligh	ts and navigation flights. This course is intended only for long-term student, who are in integrated pilots training and study all c	ourses related to St	udy field PIL
(Professional Pilot)	in all three years.		
21LTP1	Air Law 1	KZ	3
Air Law; ICAO Doc	7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Anne	xes; Commission re	gulation (EU)
965/2012.			
15JZ1A	Foreign Language - English 1	Z	3
		1 1	1

Code of the group: 3S-BP-PIL-CS-23/24

Name of the group: 3rd Sem. Bachelor Full-Time PIL (CS) from 2023/24

stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary

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 10 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
11FYZ	Physics Old ich Hykš, Pavel Demo, Zuzana Malá, Tomáš Vít , Jana Kuklová Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18E	B Z	Z
21EKL	Air Transport Economy	Z,ZK	3	2P+1C	Z	Z
21LPTY	Aircraft Operations Ladislav Capoušek	ZK	2	2P+0C	Z	Z
21LTA2	Aircraft 2	Z,ZK	2	2P+1C	Z	Z
21PRJ2	Instrumentation 2 Pavel Hovorka Jakub Hospodka (Gar.)	ZK	3	2P+0C	L,Z	Z
21RDN	Radionavigation	Z,ZK	3	3P+1C	Z	Z
21VL	Aircraft Performance	Z,ZK	4	2P+2C	Z	Z
21LPX2	Flight Training 2 Jakub Hospodka, Iveta Kameníková, Jakub Charezinski, Roman Matyáš Iveta Kameníková	KZ	2	0P+1C	L,Z	Z
21APL1	Aviation English 1 for Professional Pilot	Z	3	0P+4C	Z	Z
15JZ2A	Foreign Language - English 2 Marek Tome ek (Gar.)	Z,ZK	3	0P+4C+10E	L	Z

Characteristics of the courses of this group of Study Plan: Code=3S-BP-PIL-CS-23/24 Name=3rd Sem. Bachelor Full-Time PIL (CS) from 2023/24

11FYZ	Physics	Z,ZK	5
Kinematics, dynam	nics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current.	' '	
21EKL	Air Transport Economy	Z,ZK	3
The aim of the cou	urse is to introduce students to the basic issues of economics and then to follow up on more complex problems of air transport.	. Students will thus un	derstand the
orinciples of demai	and and supply in air transport and the specific problems related to these topics. At the same time, they will gain a comprehens	sive understanding of	costs and thei
different types as v	well as airline revenues and yields.		
21LPTY	Aircraft Operations	ZK	2
Aircraft oepration for	for cruise, approach, final approach, missed approach, hodling, PBN, augmented GNSS, aviation charts for IFR flight		
21LTA2	Aircraft 2	Z,ZK	2
√lanufacturers resp	ponsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and nation	nal standards. Static s	olidity of aircr
structures. Aeroela	asticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
21PRJ2	Instrumentation 2	ZK	3
Compass, gyrosco	opic instruments (turn indicator, attitude indicator, directional gyro), inertial instruments, recording and monitoring systems, war	rning systems (TCAS,	GPWS), AFC
autopilot, flight dire	rector, autothrust), FMS, flight envelope protection, communication systems, flight computers.		
	rector, autothrust), FMS, flight envelope protection, communication systems, flight computers. Radionavigation	Z,ZK	3
21RDN			
21RDN Ground direction fi	Radionavigation	lization for navigation	during the flig
21RDN Ground direction fil Area navigation (R	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util	lization for navigation	during the fligl
21RDN Ground direction fil Area navigation (R and backups.	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util	lization for navigation	during the flig
21RDN Ground direction fil Area navigation (R and backups. 21VL	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d	lization for navigation lirector. Satellite navig	during the flig ation, system:
21RDN Ground direction file Area navigation (Rand backups. 21VL Basic terms of airc	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance	lization for navigation lirector. Satellite navig	during the flight ation, systems 4
21RDN Ground direction file Area navigation (Rand backups. 21VL Basic terms of airce	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircr	lization for navigation lirector. Satellite navig	during the flig ation, system:
21RDN Ground direction file Area navigation (Rand backups. 21VL Gasic terms of airce anding performance 21LPX2	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft rake off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS.	lization for navigation lirector. Satellite navig	during the flig ation, system 4 s A, take off a
21RDN Ground direction file Area navigation (Reand backups. 21VL Gasic terms of airce anding performance 21LPX2 Practical exercises	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft rake off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS. Flight Training 2	lization for navigation lirector. Satellite navig Z,ZK craft performance class KZ CL. The basics of instr	during the flig ation, system: 4 s A, take off a 2 ument flying,
21RDN Ground direction file Area navigation (Reand backups. 21VL Gasic terms of airce anding performance 21LPX2 Practical exercises dual exercises, em	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft rake off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS. Flight Training 2 s for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FO	lization for navigation lirector. Satellite navig Z,ZK craft performance class KZ CL. The basics of instr	during the flig ation, system 4 s A, take off a 2 ument flying,
21RDN Ground direction file Area navigation (Reand backups. 21VL Basic terms of airce anding performance 21LPX2 Practical exercises dual exercises, emelated to Study fie	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft rake off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS. Flight Training 2 s for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part Fornergency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated	lization for navigation lirector. Satellite navig Z,ZK craft performance class KZ CL. The basics of instr	during the flig ation, system 4 s A, take off a 2 ument flying,
21RDN Ground direction file Area navigation (Reand backups. 21VL Basic terms of airce anding performance 21LPX2 Practical exercises dual exercises, emelated to Study fie	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft ratke off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS. Flight Training 2 s for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part Foregency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated eld PIL (Professional Pilot) in all three years.	lization for navigation lirector. Satellite navig Z,ZK craft performance class KZ CL. The basics of instripilots training and stu	during the flig ation, system 4 s A, take off a 2 ument flying, idy all course:
21RDN Ground direction file Area navigation (Reand backups. 21VL Basic terms of airce landing performance 21LPX2 Practical exercises dual exercises, em related to Study file 21APL1 Exercises focused	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft extension of the radio of the radi	lization for navigation lirector. Satellite navig Z,ZK craft performance class KZ CL. The basics of instripliots training and stu Z ruction, principles of file	during the flig ation, system 4 s A, take off a 2 ument flying, idy all course:
21RDN Ground direction file Area navigation (Reand backups. 21VL Basic terms of airce landing performance 21LPX2 Practical exercises dual exercises, em related to Study file 21APL1 Exercises focused	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft extension of the performance class B, aircraft extension of the performance class B, aircraft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft extension of the performance class B, aircraft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft extension of the performance class B, aircraft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft extension of technical extensions aircraft down, MEL, ETOPS. Flight Training 2 so for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part Foregency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated led PIL (Professional Pilot) in all three years. Aviation English 1 for Professional Pilot I on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft constitutions.	lization for navigation lirector. Satellite navig Z,ZK craft performance class KZ CL. The basics of instripliots training and stu Z ruction, principles of file	during the flig ation, system 4 s A, take off a 2 ument flying, idy all course
21RDN Ground direction file Area navigation (Reand backups. 21VL Basic terms of airce anding performance 21LPX2 Practical exercises dual exercises, emelated to Study fie 21APL1 Exercises focused engines, instrument 15JZ2A	Radionavigation inder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar util RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight d Aircraft Performance craft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS. Flight Training 2 s for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part Forergency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated led PIL (Professional Pilot) in all three years. Aviation English 1 for Professional Pilot I on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft constints and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators procedures	Ization for navigation lirector. Satellite navig Z,ZK raft performance class KZ CL. The basics of instr pilots training and stu Z ruction, principles of fls. Z,ZK	during the flig ation, system 4 s A, take off a 2 ument flying, idy all course 3 ight, aircraft

Code of the group: 4S-BP-PIL-CS-22/23

Name of the group: 4th Sem. Bachelor Full-Time PIL (CS) from 2022/23 Requirement credits in the group: In this group you have to gain 28 credits

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

Credits in the group: 28 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
11EMO	Electromagnetic Field and Optics Zuzana Malá	Z,ZK	4	2P+1C	L	Z
11MSP	Modeling of Systems and Processes Bohumil Ková	Z,ZK	4	2P+2C+12B	L	Z
21APL2	Aviation English 2 for Professional Pilot	Z,ZK	3	0P+4C	L	Z
21LCLT	Human Factors in Aviation	ZK	3	3P+0C	L	Z
21PML	Flight Planning and Monitoring	Z,ZK	3	2P+2C	L	Z
21LPX3	Flight Training 3	KZ	2	0P+1C	L	Z
21MRG1	Meteorology 1	KZ	3	2P+2C	L	Z
21PKL1	Advanced Flying 1	KZ	4	2P+2C	L	Z
21SIFR	IFR Communication	Z	2	1P+1C	L	Z

Characteristics of the courses of this group of Study Plan: Code=4S-BP-PIL-CS-22/23 Name=4th Sem. Bachelor Full-Time PIL (CS) from 2022/23

110111 2022/23			
11EMO	Electromagnetic Field and Optics	Z,ZK	4
Electric field. Electric cu	urrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	'	
11MSP	Modeling of Systems and Processes	Z,ZK	4
System and subsystem	external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of diff	erential and differ	ential equations.
Linear and nonlinear sy	stem, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functior	n. Stability of LTI s	systems.
Discretization of continu	uous systems. System interconnection.		
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,		tion within the
airlines.			
21LCLT	Human Factors in Aviation	ZK	3
Human factors in aviation	on. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusion	s. Health and hyg	jiene, fatigue,
wakefulness and sleep.	Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies.		
21PML	Flight Planning and Monitoring	Z,ZK	3
Mass and balance. Load	of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristi	c 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 FPI	Aerodrom oper	ation minimums.
Fuel plan. Operational t	light plan.		
21LPX3	Flight Training 3	KZ	2
Deepening of theoretical	al knowledge and practical examination of progress in professional competence in pilot skills and knowledge	'	
21MRG1	Meteorology 1	KZ	3
Composition, size and	vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic	processes. Creat	ing and types of
cloud, fog, haze. Precip	itation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone.		
21PKL1	Advanced Flying 1	KZ	4
This course supplemen	ts Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Instrument flying introduction, threat and erro	or management, p	procedures for
instrument departures,	enroute flight, holdings and arrivals, instrument approaches, performance based navigation, weather consideration, flight plar	ining and monitor	ring, effective
briefings, phraseology	differences, lost communication procedures, CFIT prevention, decompresion		
21SIFR	IFR Communication	Z	2
Definitions, Terms, Abb	reviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symb	ols, Standard wo	rds and phrases
for IFR flights, Radar pr	ocedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and emerg	ency situations.	

Code of the group: 5S-BP-PIL-CS-23/24

Name of the group: 5th Sem. Bachelor Full-Time PIL (CS) from 2023/24

Requirement credits in the group: In this group you have to gain 26 credits

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

Credits in the group: 26

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
21LTP2	Air Law 2 Radoslav Zozu ák	Z,ZK	3	3P+0C	Z	Z
21MET2	Meteorology 2 Iveta Kameníková Iveta Kameníková	Z,ZK	5	2P+2C	L,Z	Z
21PKL2	Advanced Flying 2 Viktor Valenta	ZK	2	2P+0C	Z	Z
21PPY1	Operational Procedures 1 Ladislav Capoušek	Z,ZK	3	2P+1C	Z	Z
21PRKP	Practical Flight Planning Jakub Hospodka	Z,ZK	4	2P+2C	Z	Z

21ZKL2	Principles of Flight 2	ZK	3	2P+1C	Z	z
21LPX4	Flight Training 4 Jakub Hospodka, Iveta Kameníková, Jakub Charezinski, Roman Matyáš Iveta Kameníková	KZ	2	0P+1C	Z	Z
21SBP	Bachelor's Thesis Seminar Vladimír Socha, Lenka Hanáková, Marta Urbanová Marta Urbanová	Z	1	0P+1C	Z	Z
15JZ3A	Foreign Language - English 3 Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Jitka He manová, Eva Rezlerová,	Z	3	0P+4C	Z	Z

Characteristics of the courses of this group of Study Plan: Code=5S-BP-PIL-CS-23/24 Name=5th Sem. Bachelor Full-Time PIL (CS) from 2023/24

21LTP2	Air Law 2	Z,ZK	3
The course is focus	sed on the issue of commercial commercial air transport in accordance with applicable European legislation. Within the course, the i	ssue of EC regulati	ons is analyz
n detail File no. 96	5/2012, regulation no. 1321/2014 and ICAO Annexes, which significantly affect the form, method and structure of commercial air	transport and trans	sportation.
21MET2	Meteorology 2	Z,ZK	5
Climatic zones, tro	pical climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the s	tratosphere, moun	tain areas,
educing visibility p	phenomena. Observation, weather maps, important information for flight planning.		
21PKL2	Advanced Flying 2	ZK	2
earning objective	s are based on requirements laid down in Commission Regulation (EU) No 1178/2011, subjects 081 and 100. Multi engine aircraf	t and jet aircraft ch	aracteristics,
	ent, stabilized approach and landing errors, jet - performance - engine out flight, jet - handling - engine out flight go around, UPRT,	volcanic ash, cold	weather
perations, operati	on manuals, MEL procedures and deviations, flight time limitation		
1PPY1	Operational Procedures 1	Z,ZK	3
nnex 6, PART-OF	S, Air operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspace		
1PRKP	Practical Flight Planning	Z,ZK	4
PET, PSR, PNR 14 21 ZKL 2	4. practical VFR a IFR flight planning Principles of Flight 2	ZK	3
			3
	mic longitudinal stability, neutral point, location of centre of gravity, static directional & properties and stability, dynamic directional & and stability, dynamic directional & and stability, neutral point, location of centre of gravity, static directional & and stability, dynamic directional & and stability, neutral point, location of centre of gravity, static directional & and stability, neutral point, location of centre of gravity, static directional & and stability, dynamic directional & and stability, neutral point, location of centre of gravity, static directional & and stability, neutral point, location of centre of gravity, static directional & and stability, dynamic directional & and stability, neutral point, location of centre of gravity, static directional & and stability, dynamic directional & and stability of the stability of th	rip, lateral stability,	aantral nitah
, , ,		• •	•
eating, operating	(directional) & Directional), roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical limitations, manoeuvring envelope, gust-load diagram.	• •	•
	limitations, manoeuvring envelope, gust-load diagram.	al Mach number, a	erodynamic
1LPX4		• •	•
1LPX4 Deepening of theo	limitations, manoeuvring envelope, gust-load diagram. Flight Training 4 retical knowledge and practical examination of progress in professional competence in pilot skills and knowledge	al Mach number, a	erodynamic
21LPX4 Deepening of theo 21SBP	limitations, manoeuvring envelope, gust-load diagram. Flight Training 4	al Mach number, a	erodynamic 2
21LPX4 Deepening of theo 21SBP Work with informat	limitations, manoeuvring envelope, gust-load diagram. Flight Training 4 retical knowledge and practical examination of progress in professional competence in pilot skills and knowledge Bachelor's Thesis Seminar	al Mach number, a	erodynamic 2
21LPX4 Deepening of theo 21SBP Work with informat Requirements for j	limitations, manoeuvring envelope, gust-load diagram. Flight Training 4 retical knowledge and practical examination of progress in professional competence in pilot skills and knowledge Bachelor's Thesis Seminar ion sources. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for thesournal articles. Publication ethics.	al Mach number, a	erodynamic 2
P1LPX4 Deepening of theo P1SBP Vork with informat dequirements for j P1SJZ3A	limitations, manoeuvring envelope, gust-load diagram. Flight Training 4 retical knowledge and practical examination of progress in professional competence in pilot skills and knowledge Bachelor's Thesis Seminar ion sources. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for these	KZ Z sis. Presentation of	2 1 thesis.
21LPX4 Deepening of theo 21SBP Vork with informat Requirements for j 5JZ3A Grammar structure	limitations, manoeuvring envelope, gust-load diagram. Flight Training 4 retical knowledge and practical examination of progress in professional competence in pilot skills and knowledge Bachelor's Thesis Seminar ion sources. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for thesournal articles. Publication ethics. Foreign Language - English 3	KZ Z sis. Presentation of Z ty's fields of study	2 1 thesis. 3 pilot. Focus

Code of the group: 6S-BP-PIL-CS-23/24

Name of the group: 6th Sem. Bachelor Full-Time PIL (CS) from 2023/24 Requirement credits in the group: In this group you have to gain 26 credits

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

Credits in the group: 26

Note on the grou	ρ.					
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
21KPSL	Communication and Surveillance Systems in Aviation Stanislav Pleninger	ZK	3	2P+0C	L	Z
21KSAV	KSA Assessment Radoslav Zozu ák	Z,ZK	2	0P+2C	L	Z
21LCM	Aircraft Engines	Z,ZK	3	2P+1C	Z,L	Z
21LEIS	Aerodromes Ladislav Capoušek	Z,ZK	3	2P+1C	L	Z
21PPY2	Operational Procedures 2 Ladislav Capoušek	ZK	4	3P+0C	L	Z
14AP	Algorithm and Programming	KZ	4	2P+2C	L	Z
21LPX5	Flight Training 5	KZ	2	0P+1C	L	Z
21LVPK	MCC - Multicrew Cooperation	Z	2	2P+1C	L	Z
15JZ4A	Foreign Language - English 4	Z,ZK	3	0P+4C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S-BP-PIL-CS-23/24 Name=6th Sem. Bachelor Full-Time PIL (CS) from 2023/24

21KPSL	Communication and Surveillance Systems in Aviation	ZK	3
The course acquai	nts students with communication and surveillance systems both from the perspective of the air segment (aircraft systems) ar	nd from the perspective	of ground
infrastructure (grou	and systems), which together create the necessary prerequisites for ensuring safe, efficient and economical air transport.		
21KSAV	KSA Assessment	Z,ZK	2
Communication. M	anagement of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarn	ess. Workload manage	ment. Upset
preventation and re	ecovery training. Mental math.		
21LCM	Aircraft Engines	Z,ZK	3
Aircraft piston eng	ne, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Tur	bine engine, theoretica	al background,
thermal cycles, co	nstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operation	onal characteristics. En	gine control.
21LEIS	Aerodromes	Z,ZK	3
Basic definitions. A	pplicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway	Markings of movemer	nt areas.
Markings. Signs. M	larkers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting sy	stems. Visual approact	h slope indicator
systems. Runway	ights. Taxiway lights. Visual aids for denoting obstacles.		
21PPY2	Operational Procedures 2	ZK	4
Flight documentati	on and manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency sit	uations and procedure	s, Runway
contamination			
14AP	Algorithm and Programming	KZ	4
Computers, data re	epresentation, algorithms (conditions, loops), high level programming languages, introduction to Python language, lists, searc	ching and sorting algor	ithms, abstract
	ople, dictionary), regular expressions, libraries to process date and time, set arrays, functions and procedures, working with fi	les, instroduction into	object oriented
programming			
21LPX5	Flight Training 5	KZ	2
Deepening of theo	retical knowledge and practical examination of progress in professional competence in pilot skills and knowledge		
21LVPK	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,	situational awareness,	decision making
process, communi	cation, effect of stress to the multi-crew performance, standard operational procedures, automation.		
15JZ4A	Foreign Language - English 4	Z,ZK	3
Grammar structure	and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the F	aculty's fields of study	- pilot. Focus on
improvement in pe	rceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in bot	th oral and written form	. Technical texts
and their features;	terminology.		

Name of the block: Semestrální projekt Minimal number of credits of the block: 6

The role of the block: ZP

Code of the group: X1-BP-PIL-CS-22/23

Name of the group: Research Groups Bachelor Full-Time PIL (CS) from 2022/23

Requirement credits in the group: In this group you have to gain 6 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 6 Note on the group:

Note on the	•					
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
11X31	Project 1	Z	2	0P+1C	L	ZP
12X31	Project 1	Z	2	0P+1C	L	ZP
14X31	Project 1	Z	2	0P+1C	L	ZP
15X31	Project 1	Z	2	0P+1C	L	ZP
16X31	Project 1	Z	2	0P+1C	L	ZP
17X31	Project 1	Z	2	0P+1C	L	ZP
18X31	Project 1	Z	2	0P+1C	L	ZP
20X31	Project 1	Z	2	0P+1C	L	ZP
21X31	Project 1	Z	2	0P+1C	L	ZP
22X31	Project 1	Z	2	0P+1C	L	ZP
23X31	Project 1	Z	2	0P+1C	L	ZP
11X32	Project 2	Z	2	0P+2C	Z	ZP
12X32	Project 2	Z	2	0P+2C	Z	ZP
14X32	Project 2 Jana Kaliková, Jan Kr ál	Z	2	0P+2C	Z	ZP
15X32	Project 2	Z	2	0P+2C	Z	ZP
16X32	Project 2 Petr Bouchner, Tereza Kunclová	Z	2	0P+2C	Z	ZP

17X32	Project 2 Roman Št rba, Václav Baroch, Michal Drábek, Alexandra Dvo á ková, Veronika Faifrová, Eliška Glaserová, Rudolf Franz Heidu, Tomáš Horák, Vít Janoš,	Z	2	0P+2C	Z	ZP
18X32	Project 2 Nela Kr má ová	Z	2	0P+2C	Z	ZP
20X32	Project 2 Vladimír Faltus	Z	2	0P+2C	Z	ZP
21X32	Project 2 Jakub Hospodka, Vladimír Socha, Iveta Kameníková, Lenka Hanáková, Viktor Valenta, Radoslav Zozu ák, Kate ina Grötschelová, Stanislav Pleninger, Jakub Kraus,	Z	2	0P+2C	Z	ZP
22X32	Project 2	Z	2	0P+2C	Z	ZP
23X32	Project 2	Z	2	0P+2C	Z	ZP
11X33	Project 3	Z	2	0P+1C	L	ZP
12X33	Project 3	Z	2	0P+1C	L	ZP
14X33	Project 3	Z	2	0P+1C	L	ZP
15X33	Project 3	Z	2	0P+1C	L	ZP
16X33	Project 3	Z	2	0P+1C	L	ZP
17X33	Project 3	Z	2	0P+1C	L	ZP
18X33	Project 3	Z	2	0P+1C	L	ZP
20X33	Project 3	Z	2	0P+1C	L	ZP
21X33	Project 3	Z	2	0P+1C	L	ZP
22X33	Project 3	Z	2	0P+1C	L	ZP
23X33	Project 3	Z	2	0P+1C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=X1-BP-PIL-CS-22/23 Name=Research Groups Bachelor Full-Time PIL (CS) from 2022/23

(03) 110111 20	122/25		
11X31	Project 1	Z	2
12X31	Project 1	Z	2
14X31	Project 1	Z	2
15X31	Project 1	Z	2
16X31	Project 1	Z	2
17X31	Project 1	Z	2
18X31	Project 1	Z	2
20X31	Project 1	Z	2
21X31	Project 1	Z	2
22X31	Project 1	Z	2
23X31	Project 1	Z	2
11X32	Project 2	Z	2
12X32	Project 2	Z	2
14X32	Project 2	Z	2
15X32	Project 2	Z	2
16X32	Project 2	Z	2
17X32	Project 2	Z	2
18X32	Project 2	Z	2
20X32	Project 2	Z	2
21X32	Project 2	Z	2
22X32	Project 2	Z	2
23X32	Project 2	Z	2
11X33	Project 3	Z	2
12X33	Project 3	Z	2
14X33	Project 3	Z	2
15X33	Project 3	Z	2
16X33	Project 3	Z	2
17X33	Project 3	Z	2
18X33	Project 3	Z	2
20X33	Project 3	Z	2
21X33	Project 3	Z	2
22X33	Project 3	Z	2
23X33	Project 3	Z	2

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 4

The role of the block: PV

Code of the group: Y1-BP-PIL-CS-24/25

Name of the group: Comp. Sel. Courses Bachelor Full-Time PIL (CS) from 2024/25

Requirement credits in the group: In this group you have to gain 4 credits

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

Credits in the group: 4 Note on the group:

a basic view of the economic aspects of air transport.

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
15Y1EH	European Integration within Historical Context Jan Feit Jan Feit (Gar.)	KZ	2	2P+0C	Z	PV
15Y1HE	Work Hygiene and Ergonomics in Traffic Petr Musil Petr Musil (Gar.)	KZ	2	2P+0C	Z	PV
15Y1ZV	East-West dichotomy: Prelude to the Cold War Marie Michlová Marie Michlová (Gar.)	KZ	2	2P+0C	Z	PV
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
18Y1EM	Experimental Methods in Mechanics Daniel Kytý Daniel Kytý Daniel Kytý (Gar.)	KZ	2	2P+0C	Z,L	PV
21Y1MP	Matlab for project-oriented study Vladimír Socha, Lenka Hanáková Lenka Hanáková Vladimír Socha (Gar.)	KZ	2	2P+0C	Z	PV
21Y1OH	Airline Business and Operations Peter Vittek, Ladislav Capoušek, Peter Olexa Peter Olexa Peter Vittek (Gar.)	KZ	2	2P+0C	Z	PV
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L,Z	PV
15Y1HL	History of Civil Aviation	KZ	2	2P+0C	L	PV
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L,Z	PV
18Y1MT	Engineering Materials Petr Koudelka (Gar.)	KZ	2	2P+0C	L,Z	PV
18Y1PD	Computer Simulations in Transportation Petr Koudelka (Gar.)	KZ	2	2P+0C	L	PV
18Y1PS	Computer Simulations in Mechanics	KZ	2	2P+0C	L	PV
21Y1BC	Aviation safety and security Andrej Lališ	KZ	2	2P+0C	L	PV
21Y1BS	Unmanned aircraft systems 1	KZ	2	2P+0C	L	PV
21Y1RZ	Human Resources Management	KZ	2	2P+0C	L	PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV

ZITINZ	numan Resources Management	I I	-	25 +00		PV
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad Patrik Horaž ovský Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV
Characteristics of PIL (CS) from 2024	the courses of this group of Study Plan: Code=Y1-BP-PIL-CS-24/ /25	25 Name=Co	mp. Sel.	. Courses F	3achelor	Full-Time
15Y1EH	European Integration within Historical Context			P	ΚZ	2
Versailles system, forma	tion of new states. Europe and the powers, League of Nations. European policy in the 192	20s. Fascism, nac	ism, comm	unism. Little E	ntente, its p	rinciples and
	's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of erman relationship - a driving power of starting European integration.	powers during W	WII. Cold w	ar and its cons	sequences f	or Europe.
15Y1HE	Work Hygiene and Ergonomics in Traffic				۲Z	2
	pational hygiene and ergonomics, and their application in transport. Working environmen	t factors, and the	influence o	f these factors	on health c	of workers.
Creation and protection	of working conditions that do not damage public health. Mutual links: man-machine-enviro	nment. Adaptatio	n of techno	logy to possib	ilities and sl	kills of a man.
Practical examples from	the field of transportation; relevant legislature.					
15Y1ZV	East-West dichotomy: Prelude to the Cold War			P	<z< td=""><td>2</td></z<>	2
Historical prologue, evolu	ition of the "West" and "East" from the 1500s. Focus on the history in the period between 1	850 nad 1950. Mi	lestones an	d continuity of	the internat	ional relations
	y and the beginning of the 20th century. Revolutions, the causes and consequences. Scie	ntific and technol	ogical prog	ress, the caus	es and cons	sequences.
	nistory. Social changes. Discussions on texts, sources.					
	Anatomy, Mobility and Safety of Man			1 .	<z td="" <=""><td>2</td></z>	2
	nical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical				-	
	scular-skeletal system. Injury of human organs and musculo-skeletal system during traffic	accidents. Mobil	ity of ill and	injured man a	ınd his treat	ment. Human
· ·	ve means and traffic safety regulations.					
	Experimental Methods in Mechanics			1 .	<z td="" <=""><td>2</td></z>	2
	experimental mechanics. Sensors for mechanical testing. Overview of experimental meth				•	•
	and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Op	otical based strair	n measuren	nent. Fatigue a	nd lifetime p	prediction.
	esting. Introduction to electron microscopy. Errors in measurement.					
	Matlab for project-oriented study			1 .	<z td="" <=""><td>2</td></z>	2
	focused on the problem-solving during bachelor's thesis preparation and it is based on st					•
· · · · · · · · · · · · · · · · · · ·	ed on actual students' needs and suggestions. The subject will have a flexible form, which	is expected to b	ring an imp			lab skills.
	Airline Business and Operations			1 -	<z td="" <=""><td>2</td></z>	2
•	mprehensive view of the commercial, operational and transportation activities of air transpo	•		•		•
various aspects of their s	trategy, economic and operational indicators. It introduces students in detail to operational	processes and th	e essential:	s of transportat	ion process	es. It provides

ealth insurance of home 5Y1HL	lefinition of terms, risks and possible health damage, working conditions and health protection with focus on transportation and foreign business trips, statistics, working practice.	n. Health protection	programmes,
5Y1HL F	and foreign business trips, statistics, working practice.		
· · · · · —			
valantana of fluina -l-il	History of Civil Aviation	KZ	2
∍gırırııngs or riying, deve	lopment of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development	of airports in the C	zech Republic.
orld airports. Famous av	viators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era	of aviation. Golden	era of civil
iation. Modern era of civ	ril aviation. Airline companies. Supersonic flying.		
7Y1LL L	ogistics of Passenger and Freight Air Transport	KZ	2
ogistics airline passenge	r and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial t	transport process p	assengers and
r cargo. Information syst	ems in air transport. Global distribution systems.		
8Y1MT E	Engineering Materials	KZ	2
stematic overview of m	ain classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	and composites, at	ttention is paid
biological materials and	to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection	n charts.	
8Y1PD C	Computer Simulations in Transportation	KZ	2
inciples and overview of	f tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	ment and adaptati	on of geometry
om other CAE systems.	Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application of	the load. Basic
sks of structural and mo	dal analysis. Introduction to complex nonlinear problems.		
8Y1PS C	Computer Simulations in Mechanics	KZ	2
inciples and overview of	f tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model develop	ment and adaptati	on of geometry
om other CAE systems.	Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions	and application of	the load. Basic
sks of structural and mo	dal analysis. Introduction to complex nonlinear problems.		
1Y1BC A	Aviation safety and security	KZ	2
story of safety and secu	rity development in aviation. Modern tools for safety and security management. Research and development of safe and se	cure systems.	
1Y1BS L	Jnmanned aircraft systems 1	KZ	2
nmanned Aviation Devel	opment. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division.	Operational risks a	nd operational
ocedures. Practical fligh	ts.		
1Y1RZ F	Human Resources Management	KZ	2
ne position of human res	sources in the organization and related disciplines file. Substance, importance and challenges of human resources manag	ement. Internal and	d external
vironment of human res	ource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and	d remuneration of st	taff. Positioning
smissal and redundanci	es of employees. Education of employees. Planning career management.		
	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2

Name of the block: Elective courses Minimal number of credits of the block: 0

The role of the block: V

Code of the group: VP-BP-PIL-CS

Name of the group: Bachelor Full-Time PIL (CS) voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 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
11SEMO	Seminar of Electromagnetic Field and Optics Zuzana Malá	Z	0	0P+2C	L	V
11SCFZ	Seminar of Physics Old ich Hykš, Zuzana Malá, Tomáš Vít , Jana Kuklová Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	V

Characteristics of the courses of this group of Study Plan: Code=VP-BP-PIL-CS Name=Bachelor Full-Time PIL (CS) voluntary

That action of the courses of this group of classy fram course. In the contrast of the course of this group of classy fram course.						
11SEMO	Seminar of Electromagnetic Field and Optics	Z	0			
Solving problems on ele						
11SCFZ	Seminar of Physics	Z	0			
Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.						

List of courses of this pass:

Code	Name of the course	Completion	Credits
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2

			1
11CAL1	Calculus 1	Z,ZK	7
Sequence of real n	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integral, Very and the control of	ral, Riemann integr	ral, improper
	Riemann integral. First-order differential equations, linear differential equations.		
11CAL2	Calculus 2	Z,ZK	5
	r differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and		
11EMO	Electromagnetic Field and Optics	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
11FYZ	Physics	Z,ZK	5
	Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electrostatics and electrostatics.		1
11GIE	Geometry	KZ	3
Differential geome	etry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of	of the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		
11LA	Linear Algebra	Z,ZK	3
Vector spaces (line	ear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the	-	minants and
441400	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications.		
11MSP	Modeling of Systems and Processes	Z,ZK	4
1 -	stem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, exterior as a tool, examples of formulation of different linear system, exterior as a tool, examples of formulation of different linear system, exterior as a tool, examples of formulation of different linear system, exterior as a tool, examples of formulation of different linear system.		-
Linear and non	linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection.	m. Stability of LTTS	systems.
110057		7	
11SCFZ	Seminar of Physics	Z	0
4405M0	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody		
11SEMO	Seminar of Electromagnetic Field and Optics	Z	0
440747	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	7 71/	
11STAT	Statistics	Z,ZK	4
Basics of probabil	lity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parameters and correlation and properties.	iric tests Nonparan	netric tests
44V04	Regression and correlation analysis	7	
11X31	Project 1	Z	2
11X32	Project 2	Z	2
11X33	Project 3	Z	2
12X31	Project 1	Z	2
12X32	Project 2	Z	2
12X33	Project 3	Z	2
14AP	Algorithm and Programming	KZ	4
	epresentation, algorithms (conditions, loops), high level programming languages, introduction to Python language, lists, searching ar	l .	ns, abstract
	pple, dictionary), regular expressions, libraries to process date and time, set arrays, functions and procedures, working with files, insi		
	programming		
14X31	Project 1	Z	2
14X32	Project 2	Z	2
14X33	Project 3	Z	2
15JZ1A	Foreign Language - English 1	Z	3
	to relight canguage - English it tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	I	-
Grammatical Girder	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		. Licinicinal y
15JZ2A	Foreign Language - English 2	Z,ZK	3
	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co		_
Grammatioa otraci	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		Liomontary
15JZ3A	Foreign Language - English 3	Z	3
	e and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty's	I	1
	rceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral ar		
' '	and their features; terminology.		
15JZ4A	Foreign Language - English 4	Z,ZK	3
	and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty's	1 '	1
	rceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral ar		
	and their features; terminology.		
15X31	Project 1	Z	2
15X32	Project 2	Z	2
15X33	Project 3	Z	2
15Y1BO	Work Safety and Health Protection in Transportation	KZ	2
	Work Safety and Health Protection in Inansportation Slative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. H	1	1
. undamontariegis	health insurance of home and foreign business trips, statistics, working practice.	cam protoction pr	ogrammos,
15Y1EH	European Integration within Historical Context	KZ	2
	formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Li	I	1
-	er Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and i		-
3	New quality of French-German relationship - a driving power of starting European integration.		po.
15Y1HE	Work Hygiene and Ergonomics in Traffic	KZ	2
	of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	1	1
	ection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to pe		
	Practical examples from the field of transportation; relevant legislature.		

15Y1HL	History of Civil Aviation	KZ	2
	g, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of a	•	
World airports. Fa	amous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of aviation. Modern era of civil aviation. Airline companies. Supersonic flying.	aviation. Golden e	era of civil
15Y1ZV	East-West dichotomy: Prelude to the Cold War	KZ	2
	, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and continui		
	century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, the		
	Economic and financial history. Social changes. Discussions on texts, sources.		
16X31	Project 1	Z	2
16X32	Project 2	Z	2
16X33	Project 3	Z	2
17X31	Project 1	Z	2
17X32	Project 2	Z	2
17X33	Project 3	Z	2
17Y1LL	Logistics of Passenger and Freight Air Transport	KZ	2
Logistics airline pa	ssenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans air cargo. Information systems in air transport. Global distribution systems.	sport process pass	engers and
18X31	Project 1	Z	2
18X32	Project 2	Z	2
18X33	Project 3	Z	2
18Y1AM	Anatomy, Mobility and Safety of Man	KZ	2
	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation		m. Structure
and biomechanics	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m	nan and his treatme	ent. Human
40)/4514	joint prostheses. Protective means and traffic safety regulations.		
18Y1EM	Experimental Methods in Mechanics role of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to	KZ	2 Docign of
	cedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fai	-	- 1
опротителна: рто	Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	ngue and meanie p	
18Y1MT	Engineering Materials	KZ	2
-	ew of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and	•	tion is paid
	ogical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's		
18Y1PD Principles and over	Computer Simulations in Transportation rview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model developmen	KZ nt and adaptation o	2 of geometry
	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and		
•	tasks of structural and modal analysis. Introduction to complex nonlinear problems.		
18Y1PS	Computer Simulations in Mechanics	KZ	2
•	rview of tools for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development		٠ , ا
from other CAE sys	stems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and tasks of structural and modal analysis. Introduction to complex nonlinear problems.	application of the	load. Basic
20X31	Project 1	Z	2
20X32	Project 2	Z	2
20X33	Project 3	Z	2
21APL1	Aviation English 1 for Professional Pilot	Z	3
	d on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft construction	l l	
	engines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators	procedures.	
21APL2	Aviation English 2 for Professional Pilot	Z,ZK	3
Exercises focused	d on repetition and smoother communication within VFR and IFR communication, communication with technical staff at the airport, a fairlines.	fluent conversation	within the
21CON	Navigation Calculations	KZ	2
	s; times - UTC, Zulu, LT; positioning; sunrise and sunset; distance calculation; projection; maps and symbols; declination; speed; winc		
	VFR route selection; position plotting.	·	,
21EKL	Air Transport Economy	Z,ZK	3
	ourse is to introduce students to the basic issues of economics and then to follow up on more complex problems of air transport. Students to the basic issues of economics and then to follow up on more complex problems of air transport.		
principles of dema	and and supply in air transport and the specific problems related to these topics. At the same time, they will gain a comprehensive und different types as well as airline revenues and yields.	derstanding of cost	s and their
21HAV	Weight and Balance of Aircraft	Z,ZK	3
	ass and balance, basic aircraft masses, weighing and maximum aircraft masses, overloading, standard weights of passenger, baggag		
	ad, flight documentation - loadsheet, trimsheet, load securing, determination of centre of gravity, influence of centre of gravity on the		
21KPSL	Communication and Surveillance Systems in Aviation	ZK	3
	uaints students with communication and surveillance systems both from the perspective of the air segment (aircraft systems) and from infrastructure (ground systems), which together create the necessary prerequisites for ensuring safe, efficient and economical air to	ransport.	of ground
21KSAV	KSA Assessment	Z,ZK	2
	Management of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness. We preventation and recovery training. Mental math.	_	
21LCLT	Human Factors in Aviation	ZK	3
Human factors in	aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core com		e, fatigue,
21LCM	Aircraft Engines	Z,ZK	3
•	jine, 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	=	- 1
mermai cycles. Co	anamonon aonomea, operamonar onaraotenamoa, rumojet anu tumoran enginea, naah construction moudies, anu men operational ch	aracteriotico. EHUII	io contituti. I

21LDA1	Aircraft 1	Z,ZK	3			
Aircraft structural a	and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and conceptual design types - definitions and basic knowledge of the problem.	•	aft loadings.			
	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic					
21LEIS	Aerodromes	Z,ZK	3			
	ns. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Ma	-				
Markings. Signs. Markers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting systems. Visual approach slope indicator systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles.						
21LPTY		ZK	2			
ZILFII	Aircraft Operations Aircraft operation for cruise, approach, final approach, missed approach, hodling, PBN, augmented GNSS, aviation charts for IF		2			
21LPX1	Flight Training 1	KZ	2			
	eses for improvement of theoretical knowledge in a range of at least PPL(A) of the objects 010 - 090 in accordance with Part FCL. The	I I				
	ights and navigation flights. 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.	•				
21LPX2	Flight Training 2	KZ	2			
	es for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. The	e basics of instrum	ent flying,			
dual exercises, en	nergency procedures, descents 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.					
21LPX3	Flight Training 3	KZ	2			
	Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge.					
21LPX4	Flight Training 4	KZ	2			
	Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge					
21LPX5	Flight Training 5	KZ	2			
	Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge					
21LTA2	Aircraft 2	Z,ZK	2			
Manufacturers resp	consibility, 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		_			
21LTP1	Air Law 1	KZ	3			
Air Law; ICAO Do	pc 7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Annexes;	Commission regula	ation (EU)			
041.TD0	965/2012.	7.71/				
21LTP2	Air Law 2 sed on the issue of commercial commercial air transport in accordance with applicable European legislation. Within the course, the issu	Z,ZK	3			
	965/2012, regulation no. 1321/2014 and ICAO Annexes, which significantly affect the form, method and structure of commercial air t					
21LVPK	MCC - Multicrew Cooperation	7	2			
	index - Mutilibrew Cooperation sis in relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situation	∠ aLawareness decis				
I light baloty analyt	process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation.	ai awai on ooo, aook	olo i i i i i i i i i i i i i i i i i i			
21MET2	Meteorology 2	Z.ZK	5			
	tropical climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the sti	1 ' 1	-			
	reducing visibility phenomena. Observation, weather maps, important information for flight planning.	•				
21MRG1	Meteorology 1	KZ	3			
Composition, size	and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic pro	cesses. Creating a	ind types of			
	cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-fronta	l cyclone.				
21OBN General Navigation ZK 5						
The Earth: latitude and longitude. Reference systems. Circles on the Earth and distance. Calculations. Time. Magnetism and sirections. Wind and Speed: Course, heading, track.						
Calculations: navigation computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR navigation. Nav Log preparation and						
04 DICL 4	use. Navigation display. Navigation in remote and oceanic areas.	1/7	4			
21PKL1	Advanced Flying 1	KZ	4			
This course supplements Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Instrument flying introduction, threat and error management, procedures for instrument departures, enroute flight, holdings and arrivals, instrument approaches, performance based navigation, weather consideration, flight planning and monitoring, effective						
briefings, phraseology differences, lost communication procedures, CFIT prevention, decompresion						
21PKL2	Advanced Flying 2	ZK	2			
	es are based on requirements laid down in Commission Regulation (EU) No 1178/2011, subjects 081 and 100. Multi engine aircraft a	1				
1	ement, stabilized approach and landing errors, jet - performance - engine out flight, jet - handling - engine out flight go around, UPRT,	-				
	operations, operation manuals, MEL procedures and deviations, flight time limitation					
21PML	Flight Planning and Monitoring	Z,ZK	3			
Mass and balance.	Load of aircraft. Determination of centre of gravity - loadsheet, trimsheet. Aircraft weighing. Overloading of aircraft. Basic characteristic s	peeds. Runway cha	racteristics.			
Take off and landing	g performance. Drift down. ETOPS. MEL. Flight planning and monitoring. Routing. FL and speeds selection. Charts. ICAO ATC FPL. A	erodrom operation	minimums.			
	Fuel plan. Operational flight plan.		_			
21PPY1	Operational Procedures 1	Z,ZK	3			
0.155:15	Annex 6, PART-OPS, Air operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspa					
21PPY2	Operational Procedures 2	ZK	4			
Flight document	tation and manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situation	is and procedures,	Runway			
21PRJ1 Instrumentation 1 ZK 2						
	Instrumentation on principles of instrumentation, electronic displays, basics of measurement - sensitivity and errors, engine instrumentation (pressure					
	ow measurement, torque and EPR measurement), indication in other aircraft systems (position, fire and icing indication, vibration mo					
monitoring, aerometric instruments (sensors, altimeter, air speed indicator, VSI, ADC).						
21PRJ2	Instrumentation 2	ZK	3			
	pic instruments (turn indicator, attitude indicator, directional gyro), inertial instruments, recording and monitoring systems, warning sy		-			
(autopilot, flight director, autothrust), FMS, flight envelope protection, communication systems, flight computers.						

21PRKP	Practical Flight Planning	Z,ZK	4
	ice 2. fuel planning, PDP, RIF,RCF 3. ATC FPL 4. Preflight procedure and briefing-NOTAM + weather(METAR,SIGMET) 5. Jeppesen	_	
theory 7. VFR flig	ght planning- ICAO mapa, softwary 8. IFR flight planning- theory 9. PBN- RNAV, RNP 10. IFR flight planning- softwary 11. MRJT- OFF	12. ETOPS a NAT	Γ HLA 13.
	PET, PSR, PNR 14. practical VFR a IFR flight planning		
21RDN	Radionavigation	Z,ZK	3
	nder (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization	-	
Area navigation (R	RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director and backups.	. Satellite navigatio	n, systems
21SBP	Bachelor's Thesis Seminar	Z	1
	mation sources. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for the	_	
Work with inion	Requirements for journal articles. Publication ethics.	olo: i rodomation ol	1 110010.
21SIFR	IFR Communication	Z	2
	Abbreviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symbols	_	
	phts, Radar procedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and		
21SVFR	VFR Communication	Z	4
Course contents	s are based on PART FCL, part 090. It defines terms and abbreviations used in VFR communication. Phraseology and procedures in	standard and non-	standard
	situations.		
21TVFR	Theory for VFR Training	Z,ZK	8
Course content is	based on PPL(A) theory requirements according to Part-FCL. Lectures cover topics that are necessary to commence the practical parts	art of ATP(A) training	ng, such as
principles of flight	t, airframe and powerplant, aircraft systems, instrumentation, mass and balance, performance, air law and ATC procedures, meteorol	ogy, operational pr	ocedures,
	navigation, radionavigation, VFR communication, flight planning and monitoring and human factor.		
21VL	Aircraft Performance	Z,ZK	4
Basic terms of aircr	raft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft per		take off and
- 11/21	landing performance, after take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, E		
21X31	Project 1	Z	2
21X32	Project 2	Z	2
21X33	Project 3	Z	2
21Y1BC	Aviation safety and security	KZ	2
History o	f safety and security development in aviation. Modern tools for safety and security management. Research and development of safe		S.
21Y1BS	Unmanned aircraft systems 1	KZ	2
Unmanned Aviatio	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope	erational risks and	operational
	procedures. Practical flights.		
21Y1MP	Matlab for project-oriented study	KZ	2
	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises		- 1
	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement		
21Y1OH	Airline Business and Operations	KZ	2
•	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiz their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transp		
various aspects of t	a basic view of the economic aspects of air transport.	ortation processes	s. It provides
21Y1RZ	Human Resources Management	KZ	2
	human resources in the organization and related disciplines file. Substance, importance and challenges of human resources manage		
-	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and ren		
	dismissal and redundancies of employees. Education of employees. Planning career management.		· .
21ZKL1	Principles of Flight 1	ZK	3
Aerodynamic drag,	relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pr	essures around wi	ng, 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 lift and drag increase.	drag, interference,	, devices for
21ZKL2	Principles of Flight 2	ZK	3
	amic longitudinal stability, neutral point, location of centre of gravity, static directional & amp; lateral stability, dynamic directional & amp		ontrol pitch
(longitudinal), yav	w (directional) & amp; roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical	Mach number, aer	odynamic
	heating, operating limitations, manoeuvring envelope, gust-load diagram.	,	
22X31	Project 1	Z	2
22X32	Project 2	Z	2
22X33	Project 3	Z	2
	1.0,000		
23X31	Project 1	Z	2

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-11-15, time 13:17.

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Project 3