Study plan

Name of study plan: Bachelor PIL (EN) 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-EN-22/23 Name of the group: 1st Sem. Bachelor Full-Time PIL (EN) 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:

Note on the grou	p.					
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-E	Calculus 1 Ond ej Navrátil, Magdalena Hykšová Magdalena Hykšová Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	Z	Z
11LA-E	Linear Algebra Martina Be vá ová Martina Be vá ová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10B	Z	Z
210BN-E	General Navigation Denisa Svobodová Denisa Svobodová	ZK	5	4P+0C	Z	Z
21TVFR-E	Theory for VFR Training	Z,ZK	8	4P+4C	Z	Z
11GIE-E	Geometry Šárka Vorá ová Šárka Vorá ová Šárka Vorá ová (Gar.)	KZ	3	2P+2C+12B	Z	Z
21SVFR-E	VFR Communication Milan Kameník	Z	4	2P+1C	Z	Z

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

11CAL1-E	Calculus 1	Z,ZK	7
Sequence of real numb	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-	dimensional Eukl	idean space and
Cartesian coordinate sy	rstem. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several rea	I variables.	
11LA-E	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.		
21OBN-E	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	computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR nav	vigation. Nav Log	preparation and
use. Navigation display.	Navigation in remote and oceanic areas.		
21TVFR-E	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, radionavigation	tion, VFR communication, flight planning and monitoring and human factor.		
11GIE-E	Geometry	KZ	3
Differential geometry of	curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajector	y of the motion, th	he velocity, and
acceleration of a particl	e moving on a curved path.		
21SVFR-E	VFR Communication	Z	4
Course contents are ba	sed on PART FCL, part 090. It defines terms and abbreviations used in VFR communication. Phraseology and procedures in	standard and no	n-standard
situations.			

Code of the group: 2S-BP-PIL-EN-22/23 Name of the group: 2nd Sem. Bachelor Full-Time PIL (EN) 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-E	Calculus 2 Ond ej Navrátil, Magdalena Hykšová Magdalena Hykšová Ond ej Navrátil (Gar.)	Z,ZK	5	2P+3C	L	Z
11STAT-E	Statistics Ivan Nagy, Tetiana Reznychenko Tetiana Reznychenko Evženie Uglickich (Gar.)	Z,ZK	4	2P+2C	L	Z
21HAV-E	Weight and Balance of Aircraft Ota Hajzler Denisa Svobodová Anna Polánecká (Gar.)	Z,ZK	3	2P+2C	L	Z
21LDA1-E	Aircraft 1 Vladimír Plos, Max Chopart Max Chopart Vladimír Plos (Gar.)	Z,ZK	3	2P+1C	L	Z
21PRJ1-E	Instrumentation 1	ZK	2	2P+0C	L	Z
21ZKL1-E	Principles of Flight 1 Vladimír Machula	ZK	3	2P+1C	L	Z
21CON-E	Navigation Calculations Milan Kameník, Paul Rousseau Milan Kameník	KZ	2	0P+2C	L	Z
21LPX1-E	Flight Training 1 Iveta Kameníková, Jakub Hospodka	KZ	2	0P+1C	L	Z
21LTP1-E	Air Law 1 Radoslav Zozu ák	KZ	3	3P+0C	L	Z
15JZ1A-E	Foreign Language - English 1	Z	3	0P+4C+10B	L	Z

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

Indefinite integral, Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral n. 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-E Statistics Z,ZK 4 Definition of probability, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation. Testing of statistical hypothesis. Regression and correlation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear regression, analysis of variance, multiple regression, the use of matrices in regression. Z,ZK 3 21HAV-E Weight and Balance of Aircraft Z,ZK 3 Basic terms of mass and balance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, baggage and crew, determination of load of aircraft, flight documentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity position on aircaft performance. Z,ZK 3 21LDA1-E Aircraft 1 Z,ZK 3 Aircraft structural and 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	11CAL2-E Calculus 2	Z,ZK	5
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Basic terms of mass and balance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, bagage and crew, determination of old of aircraft, flight documentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity position on aircartt performance. 21LDA1-E Aircraft 1 Z,ZK 3 Aircraft structural and 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-E Instrumentation 1 ZK 2 Basic classification and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measurement of air data parameters, integrated instrument systems. ZK 3 21ZKL1-E 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 pressures around 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 drag, interference, devices for fright control, bytime VFR route selection posting. KZ 2 21LDN1-E Navigation Calculations KZ <t< td=""><td>multiple regression, the use of matrices in regression.</td><td>0</td><td></td></t<>	multiple regression, the use of matrices in regression.	0	
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21PRJ1-E Instrumentation 1 ZK 2 Basic classification and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measurement of air data parameters, integrated instrument systems. ZK 3 21ZKL1-E 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 pressures around 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 drag, interference, devices for lift and drag increase. 21CON-E 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 and wind drift; VFR route selection; position plotting. KZ 2 21LPX1-E 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. The basics of flight control, 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. KZ 3 21LTP1-E Air Law 1 KZ 3<	Aircraft structural and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and	d categorisation.	Aircraft loadings.
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21ZKL1-E 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 pressures around 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 drag, interference, devices for lift and drag increase. 21CON-E 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 and wind drift; VFR route selection; position plotting. KZ 2 21LXL1-E 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. The basics of flight control, 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. 21LTP1-E Air Law 1 KZ 3 Air	Basic classification and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, me	asurement of air of	data parameters,
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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 drag, interference, devices for lift and drag increase. 21CON-E 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 and wind drift; VFR route selection; position plotting. KZ 2 21LPX1-E 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. The basics of flight control, 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. 21LTP1-E Air Law 1 KZ 3 Air Law; ICAO Doc 7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Annexes; Commission regulation (EU) 965/2012 Z 3 15JZ1A-E 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	21ZKL1-E Principles of Flight 1	ZK	3
lift and drag increase. XZ 2 21CON-E 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 and wind drift; VFR route selection; position plotting. 2 21LPX1-E 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. The basics of flight control, 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. KZ 3 21LTP1-E Air Law 1 KZ 3 Air Law; ICAO Doc 7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Annexes; Commission regulation (EU) 965/2012 3 15JZ1A-E 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		•	0.0
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15JZ1A-E 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		s; Commission re	gulation (EU)
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.		communicative s	kills. Elementary
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.		

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

Note on the gro	oup:					
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-E	Physics Tomáš Vít , Antonio Cammarata, Jana Kuklová, Zuzana Malá Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18B	z	Z
21EKL-E	Air Transport Economy Eva Endrizalová	Z,ZK	3	2P+1C	Z	Z
21LPTY-E	Aircraft Operations Ladislav Capoušek Ladislav Capoušek	ZK	2	2P+0C	Z	Z
21LTA2-E	Aircraft 2 Max Chopart	Z,ZK	2	2P+1C	Z	Z
21PRJ2-E	Instrumentation 2 Pavel Hovorka Pavel Hovorka	ZK	3	2P+0C	L,Z	Z
21RDN-E	Radionavigation	Z,ZK	3	3P+1C	Z	Z
21VL-E	Aircraft Performance Denisa Svobodová Denisa Svobodová	Z,ZK	4	2P+2C	Z	Z
21LPX2-E	Flight Training 2 Iveta Kameníková, Jakub Hospodka, Jakub Charezinski, Roman Matyáš Iveta Kameníková	КZ	2	0P+1C	Z	Z
21APL1-E	Aviation English 1 for Professional Pilot	Z	3	0P+4C	Z	Z
15JZ2A-E	Foreign Language - English 2	Z,ZK	3	0P+4C	Z	Z

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

11FYZ-E	Physics	Z,ZK	5
Kinematics, particle dyr	amics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.		
21EKL-E	Air Transport Economy	Z,ZK	3
Economic terminology u	ised in air transport. Basic microeconomic laws. Division of the economic disciplines. Economy carrier. Economic indicators in	the management	t of air transport.
Business activities in ai	r transport.		
21LPTY-E	Aircraft Operations	ZK	2
Aircraft oepration for cru	ise, approach, final approach, missed approach, hodling, PBN, augmented GNSS, aviation charts for IFR flight		
21LTA2-E	Aircraft 2	Z,ZK	2
Manufacturers responsi	bility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national s	tandards. Static s	solidity of aircraft
structures. Aeroelasticit	y. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
21PRJ2-E	Instrumentation 2	ZK	3
Compass, gyroscopic ir	struments (turn indicator, attitude indicator, directional gyro), inertial instruments, recording and monitoring systems, warning	systems (TCAS,	GPWS), AFCS
(autopilot, flight director	, autothrust), FMS, flight envelope protection, communication systems, flight computers		
21RDN-E	Radionavigation	Z,ZK	3
Ground direction finder	(VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilizati	on for navigation	during the flight.
3 ()	- general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight direct	or. Satellite navig	ation, systems
and backups.			
21VL-E	Aircraft Performance	Z,ZK	4
	erformance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft p	performance clas	s A, take off and
	ter take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS.		
21LPX2-E	Flight Training 2	KZ	2
	nprovement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. T		, .
	ncy procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated pilot	ts training and stu	udy all courses
	L (Professional Pilot) in all three years.		
21APL1-E	Aviation English 1 for Professional Pilot	Z	3
	ontinuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft construction	on, principles of f	light, aircraft
	d systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators procedures.		
15JZ2A-E	Foreign Language - English 2	Z,ZK	3
	and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and	communicative s	kills. Elementary
stylistics forms. Oral and	d written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.		

Code of the group: 4S-BP-PIL-EN-22/23 Name of the group: 4th Sem. Bachelor Full-Time PIL (EN) 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-E	Electromagnetic Field and Optics Tomáš Vít, Antonio Cammarata, Zuzana Malá Tomáš Vít Pavel Demo (Gar.)	Z,ZK	4	2P+1C	L	Z
11MSP-E	Modeling of Systems and Processes Jana Kuklová	Z,ZK	4	2P+2C	L	Z
21APL2-E	Aviation English 2 for Professional Pilot	Z,ZK	3	0P+4C	L	Z
21LCLT-E	Human Factors in Aviation	ZK	3	3P+0C	L	Z
21PML-E	Flight Planning and Monitoring Anna Polánecká Anna Polánecká	Z,ZK	3	2P+2C	L	Z
21LPX3-E	Flight Training 3 Iveta Kameníková, Jakub Hospodka	KZ	2	0P+1C	L	Z
21MRG1-E	Meteorology 1	KZ	3	2P+2C	L	Z
21PKL1-E	Advanced Flying 1	KZ	4	2P+2C	L	Z
21SIFR-E	IFR Communication	Z	2	1P+1C	L	Z

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

Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics. Z,ZK 4 11MSP-E Modeling of Systems and Processes Z,ZK 4 Mathematical methods and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete time domain. Laplace transform, arttansform, and the recursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of technical computing environment (MATLAB). 21APL2-E 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 conversation within the airlines. ZLCLT-E Human Factors in Aviation ZK 3 Pull-E Flight Planning, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. Z,ZK 3 21PML-E Flight Planning and Monitoring Z,ZK 3 Planting of tvFR flights for small, single- and multi-engine aeroplanes KZ 2 21LPX3-E Flight Training 3 KZ 3 Deepenging of theoreti	11EMO-E	Electromagnetic Field and Optics	Z,ZK	4
Mathematical methods and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete time domain. Laplace transform, z-transform, and the recursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of technical computing environment (MATLAB). 21APL2-E 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 conversation within the airlines. ZILCLT-E Human Factors in Aviation ZK 3 Pluman factors in aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. Z,ZK 3 21PML-E Flight Planning and Monitoring Z,ZK 3 Pilght planning of VFR flights for small, single- and multi-engine aeroplanes Z,ZK 3 21MRG1-E Meteorology 1 KZ 2 Composition, size and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic processes. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4	Electric field. Electric cu	rrent. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
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(MATLAB). Z1APL2-E 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 conversation within the airlines. Z1LC1-E Human Factors in Aviation ZK 3 21LCLT-E Human Factors in Aviation ZK 3 Human factors in aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. ZIPML-E Flight Planning and Monitoring Z,ZK 3 Pilpt Planning for VFR flights for small, single- and multi-engine aeroplanes Z1/LQT3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge XZ 3 Composition, size and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic processes. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. 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, norto	Mathematical methods	and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete	time domain. Lap	lace transform,
21APL2-E 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 conversation within the airlines. 21LCLT-E Human Factors in Aviation ZK 3 Purplate Human Factors in Aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. Z,ZK 3 21PML-E Flight Planning and Monitoring Z,ZK 3 Flight planning for VFR flights for small, single- and multi-engine aeroplanes XZ 2 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 1PIKL1-E Advanced Flying 1 KZ	z-transform, and the rec	sursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of	technical compu	ting environment
Exercises focused on repetition and smoother communication within VFR and IFR communication, communication with technical staff at the airport, a fluent conversation within the airlines. 21LCLT-E Human Factors in Aviation ZK 3 Human factors in aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. 2,ZK 3 21PML-E Flight Planning and Monitoring Z,ZK 3 Flight planning for VFR flights for small, single- and multi-engine aeroplanes XZ 2 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 1PKL1-E Advanced Flying 1 KZ 4 This course supplements Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Ins	(MATLAB).			
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21LCLT-E Human Factors in Aviation ZK 3 Human factors in aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. Yeakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. 21PML-E Flight Planning and Monitoring Z,ZK 3 Flight planning for VFR flights for small, single- and multi-engine aeroplanes Z,ZK 3 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. XZ 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, flig	Exercises focused on re	petition and smoother communication within VFR and IFR communication, communication with technical staff at the airport,	a fluent conversa	tion within the
Human factors in aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. Health and hygiene, fatigue, wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. 21PML-E Flight Planning and Monitoring Z,ZK 3 Plight planning for VFR flights for small, single- and multi-engine aeroplanes KZ 2 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 Z	airlines.			
wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies. 21PML-E Flight Planning and Monitoring Z,ZK 3 Flight planning for VFR flights for small, single- and multi-engine aeroplanes KZ 2 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 Z 2 21SIFR-E IFR Communication Z 2 2	21LCLT-E	Human Factors in Aviation	ZK	3
21PML-E Flight Planning and Monitoring Z,ZK 3 Flight planning for VFR flights for small, single- and multi-engine aeroplanes KZ 2 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 21SIFR-E IFR Communication Z 2	Human factors in aviation	n. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusion	s. Health and hyg	jiene, fatigue,
Flight planning for VFR flights for small, single- and multi-engine aeroplanes KZ 2 21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 21SIFR-E IFR Communication Z 2	wakefulness and sleep.	Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core competencies.		
21LPX3-E Flight Training 3 KZ 2 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge KZ 3 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 21SIFR-E IFR Communication Z 2	21PML-E	Flight Planning and Monitoring	Z,ZK	3
Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge Image: Composition of progress in professional competence in pilot skills and knowledge 21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 21SIFR-E IFR Communication Z 2	Flight planning for VFR	flights for small, single- and multi-engine aeroplanes		
21MRG1-E 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. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. KZ 4 21PKL1-E 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 Z 2 21SIFR-E IFR Communication Z 2	21LPX3-E	Flight Training 3	KZ	2
Composition, size and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic processes. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. XZ 4 21PKL1-E 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 Z 2	Deepening of theoretica	I knowledge and practical examination of progress in professional competence in pilot skills and knowledge		
cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. 21PKL1-E 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 Z 2 21SIFR-E IFR Communication Z 2	21MRG1-E	Meteorology 1	KZ	3
21PKL1-E 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 Z 2 21SIFR-E IFR Communication Z 2	Composition, size and v	ertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic	processes. Creat	ting and types of
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 21SIFR-E IFR Communication Z 2	cloud, fog, haze. Precipi	tation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone.		
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 21SIFR-E IFR Communication Z 2	21PKL1-E	Advanced Flying 1	KZ	4
briefings, phraseology differences, lost communication procedures, CFIT prevention, decompresion 21SIFR-E IFR Communication Z 2	This course supplement	s Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Instrument flying introduction, threat and erro	or management,	procedures for
21SIFR-E IFR Communication Z 2	instrument departures, e	enroute flight, holdings and arrivals, instrument approaches, performance based navigation, weather consideration, flight play	nning and monito	ring, effective
	briefings, phraseology d	ifferences, lost communication procedures, CFIT prevention, decompresion		
Definitions, Terms, Abbreviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symbols, Standard words and phrases	21SIFR-E	IFR Communication	Z	2
	Definitions, Terms, Abbr	eviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symb	ools, Standard wo	ords and phrases
for IFR flights, Radar procedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and emergency situations.	for IFR flights, Radar pro	ocedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and emerg	ency situations.	

Code of the group: 5S-BP-PIL-EN-23/24 Name of the group: 5th Sem. Bachelor Full-Time PIL (EN) 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-E	Air Law 2 Radoslav Zozu ák Radoslav Zozu ák	Z,ZK	3	3P+0C	Z	Z
21MET2-E	Meteorology 2 Iveta Kameníková Iveta Kameníková	Z,ZK	5	2P+2C	Z	Z
21PKL2-E	Advanced Flying 2 Viktor Valenta Viktor Valenta	ZK	2	2P+0C	L,Z	Z
21PPY1-E	Operational Procedures 1 Ladislav Capoušek Ladislav Capoušek	Z,ZK	3	2P+1C	Z	Z
21PRKP-E	Practical Flight Planning Anna Polánecká, Jakub Hospodka Jakub Hospodka	Z,ZK	4	2P+2C	Z	Z

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

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

21LTP2-E	Air Law 2	Z,ZK	3
The course is focused on	the issue of commercial commercial air transport in accordance with applicable European legislation. Within the course, the iss	'	ions is analyzed
in detail File no. 965/201	2, regulation no. 1321/2014 and ICAO Annexes, which significantly affect the form, method and structure of commercial air tra	insport and trans	sportation.
21MET2-E	Meteorology 2	Z,ZK	5
Climatic zones, tropical c	limatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the stra	tosphere, moun	tain areas,
reducing visibility phenor	nena. Observation, weather maps, important information for flight planning.		
21PKL2-E	Advanced Flying 2	ZK	2
Learning objectives are b	pased on requirements laid down in Commission Regulation (EU) No 1178/2011, subjects 081 and 100. Multi engine aircraft a	and jet aircraft cl	naracteristics,
energy management, sta	bilized approach and landing errors, jet - performance - engine out flight, jet - handling - engine out flight go around, UPRT, v	olcanic ash, colo	l weather
operations, operation ma	nuals, MEL procedures and deviations, flight time limitation		
21PPY1-E	Operational Procedures 1	Z,ZK	3
Annex 6, PART-OPS, Air	operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspace		
21PRKP-E	Practical Flight Planning	Z,ZK	4
1. mass and balance 2. f	uel planning, PDP, RIF,RCF 3. ATC FPL 4. Preflight procedure and briefing-NOTAM + weather(METAR,SIGMET) 5. Jeppeser	n charts 6. VFR	light planning-
theory 7. VFR flight planr	ning- ICAO mapa, softwary 8. IFR flight planning- theory 9. PBN- RNAV, RNP 10. IFR flight planning- softwary 11. MRJT- OFP	12. ETOPS a N	AT HLA 13.
PET, PSR, PNR 14. prac	tical VFR a IFR flight planning		
21ZKL2-E	Principles of Flight 2	ZK	3
Ways of producing thrust	, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, prop	eller operation r	nodes, propeller
airstream effect, gyrosco	pic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load,	manoevures, st	ability and
controllability, transsonic	speeds.		
21LPX4-E	Flight Training 4	KZ	2
Deepening of theoretical	knowledge and practical examination of progress in professional competence in pilot skills and knowledge	'	
21SBP-E	Bachelor's Thesis Seminar	Z	1
Work with information so	urces. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for thesis	. Presentation of	f thesis.
Requirements for journal	articles. Publication ethics.		
15JZ3A-E	Foreign Language - English 3	Z	3
Grammar structure and s	tylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty'	s fields of study	pilot. Focus on
improvement in perceptiv	re and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral	and written form	. Technical texts
and their features; termin	ology.		

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

Name of the group: 6th Sem. Bachelor Full-Time PIL (EN) 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
21KPSL-E	Communication and Surveillance Systems in Aviation Jakub Steiner Jakub Steiner	ZK	3	2P+0C	L	Z
21KSAV-E	KSA Assessment Radoslav Zozu ák Radoslav Zozu ák	Z,ZK	2	0P+2C	L	Z
21LCM-E	Aircraft Engines Vladimír Machula Jakub Kraus (Gar.)	Z,ZK	3	2P+1C	L	Z
21LEIS-E	Aerodromes Ladislav Capoušek, Slobodan Stoji Ladislav Capoušek	Z,ZK	3	2P+1C	L	Z
21PPY2-E	Operational Procedures 2 Ladislav Capoušek Ladislav Capoušek (Gar.)	ZK	4	3P+0C	L	Z
14AP-E	Algorithm and Programming Vít Fábera, Michal Je ábek, Júlia Škovierová Vít Fábera Vít Fábera (Gar.)	KZ	4	2P+2C	L	Z
21LPX5-E	Flight Training 5 Iveta Kameníková, Jakub Hospodka	KZ	2	0P+1C	L	Z
21LVPK-E	MCC - Multicrew Cooperation Vladislav Pružina	Z	2	2P+1C	L	Z

15JZ4A-E Foreign Language - English 4 Jitka He manová, Peter Morpuss, Marie Michlová, Markéta Musilová, Len Monková, Jan Feit, Eva Rezlerová, Markéta Vojanová, Barbora Horá ková	a Z,ZK	3	0P+4C	L	Z
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Characteristics of th	e courses of this group of Study Plan: Code=6S-BP-PIL-EN-23/24 Name=6th Sem. Bache	lor Full-Time	PIL (EN)
from 2023/24			
21KPSL-E C	ommunication and Surveillance Systems in Aviation	ZK	3
The course acquaints stude	ents with communication and surveillance systems both from the perspective of the air segment (aircraft systems) and fro	n the perspective	of ground
infrastructure (ground syste	ems), which together create the necessary prerequisites for ensuring safe, efficient and economical air transport.		
21KSAV-E K	SA Assessment	Z,ZK	2
Communication. Managem	ent of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness. 🕅	orkload manage	ment. Upset
preventation and recovery	training. Mental math.		
21LCM-E A	ircraft Engines	Z,ZK	3
	retical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine e		l background,
thermal cycles, construction	n schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational c	haracteristics. En	gine control.
21LEIS-E A	erodromes	Z,ZK	3
Basic definitions. Applicabil	ity. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mark	ings of movemer	t areas.
Markings. Signs. Markers. V	/isual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting systems	s. Visual approact	n slope indicator
systems. Runway lights. Ta:	xiway lights. Visual aids for denoting obstacles.		
21PPY2-E 0	perational Procedures 2	ZK	4
Flight documentation and n	nanuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situation	s and procedure	s, Runway
contamination			
14AP-E A	Igorithm and Programming	KZ	4
Computers, data represent	ation, algorithms (conditions, loops), high level programming languages, introduction to Python language, lists, searching	and sorting algori	thms, abstract
data types (set, tupple, dict	ionary), regular expressions, libraries to process date and time, set arrays, functions and procedures, working with files, in	stroduction into c	bject oriented
programming			
21LPX5-E FI	light Training 5	KZ	2
Deepening of theoretical kr	nowledge and practical examination of progress in professional competence in pilot skills and knowledge		
21LVPK-E M	CC - Multicrew Cooperation	Z	2
Flight safety analysis in rela	ation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situati	onal awareness,	decision making
process, communication, e	ffect of stress to the multi-crew performance, standard operational procedures, automation.		
15JZ4A-E Fo	preign Language - English 4	Z,ZK	3
Grammar structure and sty	listics. Conversational and specialised topics selected according to the language group level and with regard to the Facult	's fields of study	- pilot. Focus on
improvement in perceptive	and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral	and written form	. Technical texts
and their features; terminol	ogy.		

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-EN-22/23 Name of the group: Research Groups Bachelor Full-Time PIL (EN) 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:

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-E	Project 1	Z	2	0P+1C	L	ZP
12X31-E	Project 1	Z	2	0P+1C	L	ZP
14X31-E	Project 1	Z	2	0P+1C	L	ZP
15X31-E	Project 1	Z	2	0P+1C	L	ZP
16X31-E	Project 1	Z	2	0P+1C	L	ZP
17X31-E	Project 1	Z	2	0P+1C	L	ZP
18X31-E	Project 1	Z	2	0P+1C	L	ZP
20X31-E	Project 1	Z	2	0P+1C	L	ZP
21X31-E	Project 1 Jakub Hospodka, Lenka Hanáková, Jakub Kraus, Slobodan Stoji , Peter Vittek, Natalia Guskova, Kate ina Grötschelová, Terézia Pilmannová, Lukáš Popek	Z	2	0P+1C	L	ZP
22X31-E	Project 1	Z	2	0P+1C	L	ZP
23X31-E	Project 1	Z	2	0P+1C	L	ZP
11X32-E	Project 2	Z	2	0P+2C	Z	ZP

12X32-E	Project 2	Z	2	0P+2C	Z	ZP
14X32-E	Project 2	Z	2	0P+2C	Z	ZP
15X32-E	Project 2	Z	2	0P+2C	Z	ZP
16X32-E	Project 2	Z	2	0P+2C	Z	ZP
17X32-E	Project 2	Z	2	0P+2C	Z	ZP
18X32-E	Project 2	Z	2	0P+2C	Z	ZP
20X32-E	Project 2	Z	2	0P+2C	Z	ZP
21X32-E	Project 2 Jakub Hospodka, Lenka Hanáková, Peter Vittek, Terézia Pilmannová, Bo Stloukal, Andrej Lališ	Z	2	0P+2C	Z	ZP
22X32-E	Project 2	Z	2	0P+2C	Z	ZP
23X32-E	Project 2	Z	2	0P+2C	Z	ZP
11X33-E	Project 3	Z	2	0P+1C	L	ZP
12X33-E	Project 3	Z	2	0P+1C	L	ZP
14X33-E	Project 3	Z	2	0P+1C	L	ZP
15X33-E	Project 3	Z	2	0P+1C	L	ZP
16X33-E	Project 3	Z	2	0P+1C	L	ZP
17X33-E	Project 3	Z	2	0P+1C	L	ZP
18X33-E	Project 3	Z	2	0P+1C	L	ZP
20X33-E	Project 3	Z	2	0P+1C	L	ZP
21X33-E	Project 3 Max Chopart, Jakub Hospodka, Vladimír Socha, Peter Vittek, Kate ina Grötschelová, Terézia Pilmannová, Bo Stloukal, Andrej Lališ	Z	2	0P+1C	L	ZP
22X33-E	Project 3	Z	2	0P+1C	L	ZP
23X33-E	Project 3	Z	2	0P+1C	L	ZP

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

(EN) from 202 11X31-E	Project 1	Z	2
12X31-E	Project 1	Z	2
14X31-E	Project 1	Z	2
15X31-E	Project 1	Z	2
16X31-E	Project 1	Z	2
17X31-E	Project 1	Z	2
18X31-E	Project 1	Z	2
20X31-E	Project 1	Z	2
21X31-E	Project 1	Z	2
22X31-E	Project 1	Z	2
23X31-E	Project 1	Z	2
11X32-E	Project 2	Z	2
12X32-E	Project 2	Z	2
14X32-E	Project 2	Z	2
15X32-E	Project 2	Z	2
16X32-E	Project 2	Z	2
17X32-E	Project 2	Z	2
18X32-E	Project 2	Z	2
20X32-E	Project 2	Z	2
21X32-E	Project 2	Z	2
22X32-E	Project 2	Z	2
23X32-E	Project 2	Z	2
11X33-E	Project 3	Z	2
12X33-E	Project 3	Z	2
14X33-E	Project 3	Z	2
15X33-E	Project 3	Z	2
16X33-E	Project 3	Z	2
17X33-E	Project 3	Z	2
18X33-E	Project 3	Z	2
20X33-E	Project 3	Z	2
21X33-E	Project 3	Z	2
22X33-E	Project 3	Z	2
23X33-E	Project 3	Z	2

Code of the group: Y1-BP-PIL-EN-24/25 Name of the group: Comp. Sel. Courses Bachelor Full-Time PIL (EN) 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:

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-E	European Integration within Historical Context	KZ	2	2P+0C	Z	PV
15Y1HE-E	Work Hygiene and Ergonomics in Traffic	KZ	2	2P+0C	Z	PV
15Y1ZV-E	East-West dichotomy: Prelude to the Cold War	KZ	2	2P+0C	Z	PV
18Y1AM-E	Anatomy, Mobility and Safety of Man	KZ	2	2P+0C	Z	PV
18Y1EM-E	Experimental Methods in Mechanics	KZ	2	2P+0C	Z	PV
21Y1MJ-E	Matlab for projects	KZ	2	2P+0C	Z	PV
21Y1MP-E	Matlab for project-oriented study Lenka Hanáková, Vladimír Socha Vladimír Socha	KZ	2	2P+0C	Z	PV
21Y1OH-E	Airline Business and Operations Peter Olexa, Eva Endrizalová Peter Olexa	KZ	2	2P+0C	Z	PV
15Y1BO-E	Work Safety and Health Protection in Transportation	KZ	2	2P+0C	L	PV
15Y1HL-E	History of Civil Aviation	KZ	2	2P+0C	L	PV
17Y1LL-E	Logistics of Passenger and Freight Air Transport	KZ	2	2P+0C	L	PV
18Y1MT-E	Engineering Materials	KZ	2	2P+0C	L	PV
18Y1MX-E	Materials in Transportation	KZ	2	2P+0C	L	PV
18Y1PD-E	Computer Simulations in Transportation	KZ	2	2P+0C	L	PV
18Y1PS-E	Computer Simulations in Mechanics Petr Zlámal	KZ	2	2P+0C	L	PV
21Y1BC-E	Aviation safety and security	KZ	2	2P+0C	L	PV
21Y1BS-E	Unmanned aircraft systems 1 Jakub Kraus, Michal erný, Tomáš Tlu ho	KZ	2	2P+0C	L	PV
21Y1RZ-E	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 Patrik Horaž ovský (Gar.)	KZ	2	2P+0C		PV

Characteristics of the courses of this group of Study Plan: Code=Y1-BP-PIL-EN-24/25 Name=Comp. Sel. Courses Bachelor Full-Time PIL (EN) from 2024/25

15Y1EH-E	European Integration within Historical Context	KZ	2
Versailles system, forma	ttion of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism	. Little Entente, its	s principles and
goals. Europe after Hitle	r's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and	d its consequence	s for Europe.
New quality of French-G	erman relationship - a driving power of starting European integration.		
15Y1HE-E	Work Hygiene and Ergonomics in Traffic	KZ	2
Basic knowledge of occ	upational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these	e factors on healt	n of workers.
Creation and protection	of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to	o possibilities and	skills of a man.
Practical examples from	the field of transportation; relevant legislature.		
15Y1ZV-E	East-West dichotomy: Prelude to the Cold War	KZ	2
Historical prologue, evol	ution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and con	tinuity of the interr	national relations
in the end of 19th centu	ry and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress, t	the causes and co	onsequences.
Economic and financial	history. Social changes. Discussions on texts, sources.		
18Y1AM-E	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. Anato	mical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulat	ion and nervous s	ystem. Structure
and biomechanics of mu	iscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injure	ed man and his tre	atment. Human
joint prostheses. Protect	ive means and traffic safety regulations.		
18Y1EM-E	Experimental Methods in Mechanics	KZ	2
The purpose and role of	experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructi	ve testing of mate	rials. Design of
experimental procedure	s and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. F	atigue and lifetim	e prediction.
Instrumented hardness	testing. Introduction to electron microscopy. Errors in measurement.		

21Y1MJ-E	Matlab for projects				KZ	2
	focused on the problem-solving during bachelor's thesis preparation and it is based on stread on actual students' needs and suggestions. The subject will have a flexible form, which					
· · · ·	Matlab for project-oriented study	is expected to bil	ing an impro		KZ	2
	focused on the problem-solving during bachelor's thesis preparation and it is based on sti	udents' requests.	Individual ex	l ercises will	1	
	ed on actual students' needs and suggestions. The subject will have a flexible form, which	-				-
21Y1OH-E	Airline Business and Operations				KZ	2
	omprehensive view of the commercial, operational and transportation activities of air transpor					
	strategy, economic and operational indicators. It introduces students in detail to operational omic aspects of air transport.	processes and the	essentials	of transporta	ation processe	es. It provides
	Work Safety and Health Protection in Transportation				KZ	2
	definition of terms, risks and possible health damage, working conditions and health prote	ection with focus o	on transport			_
health insurance of hom	e and foreign business trips, statistics, working practice.					
	History of Civil Aviation			1	KZ	2
	of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in th aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era				s of the world	. Helicopters.
17Y1LL-E	Logistics of Passenger and Freight Air Transport		Tying in the		KZ	2
1 1	ger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in t	terms of logistics	svstems. Ae	1	1	_
	stems in air transport. Global distribution systems.		,			<u>j</u>
18Y1MT-E	Engineering Materials				KZ	2
-	main classes of materials used in technical design. In addition to main classes of materials				-	ntion is paid
-	nd to biomimetics. Integral approach to material selection process is also demonstrated ba	ised on so called /	Ashby's sele			0
	Materials in Transportation main classes of materials used in technical design. In addition to main classes of materials	s i e metals cera	mics polym	1	KZ	2 ntion is naid
	nd to biomimetics. Integral approach to material selection process is also demonstrated ba					
18Y1PD-E	Computer Simulations in Transportation		-		KZ	2
	of programs for stress analysis of structures. Numerical methods in mechanics, finite elem			-		
	E systems. Assignment of material properties. The types of elements and their use. Discre	tization of solid m	odel. Bound	lary conditio	ons and applic	ation of the
18Y1PS-E	ctural and modal analysis. Introduction to complex nonlinear problems. Computer Simulations in Mechanics				KZ	2
	of programs for stress analysis of structures. Numerical methods in mechanics, finite elem	nent method. Geor	netric mode			
	E systems. Assignment of material properties. The types of elements and their use. Discre					
	ctural and modal analysis. Introduction to complex nonlinear problems.					
	Aviation safety and security			1	KZ	2
	curity development in aviation. Modern tools for safety and security management. Researc	h and developmer	nt of safe an	d secure sy	1	
	Unmanned aircraft systems 1 elopment. Aircraft design. Legislation in force in the Czech Republic. Planning and executi	on of the flight Air	snace divis	ion Operati	KZ	2 operational
procedures. Practical flig		off of the highle / li	Space and			operational
21Y1RZ-E	Human Resources Management				KZ	2
	esources in the organization and related disciplines file. Substance, importance and challe	-		-		
	esource management. Human resource planning. Search, recruitment and selection of emp	oloyees. Motivation	n, evaluation	and remun	eration of staf	f. Positioning,
	cies of employees. Education of employees. Planning career management.	rood			V 7	2
00Y1XB	Active participation in a scientific project, workshop, short-term trip ab	lioau			KZ	2
Name of the bl	ock: Elective courses					
	er of credits of the block: 0					
The role of the	block: V					
Code of the gro	oup: VP-BP-PIL-EN					
Name of the gr	oup: Bachelor Full-Time PIL (EN) voluntary					
•	redits in the group:					
•	ourses in the group:					
•						
Credits in the g						
Note on the gro	•					
	Name of the course / Name of the group of courses					
Code	(in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, authors and guarantors (gar.)					
	Seminar of Electromagnetic Field and Optics	_	_			
11SEMO-E	Tomáš Vít, Antonio Cammarata, Zuzana Malá Tomáš Vít Tomáš Vít	Z	0	0P+2C	L	V
	(Gar.) Seminar of Physics					
11SCFZ-E	Tomáš Vít , Antonio Cammarata, Jana Kuklová, Zuzana Malá Tomáš Vít	Z	0	0P+2C	Z	v
	Tomáš Vít (Gar.)					

Characteristics of	the courses of this group of Study Plan: Code=VP-BP-PIL-EN Name=Bachelor Full-Time P	'IL (EN) volur	ntary
11SEMO-E	Seminar of Electromagnetic Field and Optics	Z	0
Solving problems on ele	ectric and magnetic field, electromagnetic field, optics and basics of solid-state physics.		

11SCFZ-E	Seminar of Physics	Z
Solving problems on kin	ematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics,	

List of courses of this pass:

0

Code	Name of the course	Completion	Credits
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
11CAL1-E	Calculus 1	Z,ZK	7
1	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dir	1 .	n space and
Cartesia	an coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of se	veral real variables	
11CAL2-E	Calculus 2	Z,ZK	5
Indefinite integral,	Newtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn. Pa	arametric descriptio	n of regular
k-dimensional sur	faces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary di	ferential equations	of the first
	order, linear differential equations with constant coefficients and its systems		
11EMO-E	Electromagnetic Field and Optics	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	1	
11FYZ-E	Physics Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	Z,ZK	5
11GIE-E		KZ	3
1	Geometry try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory	1	-
Differential geome	acceleration of a particle moving on a curved path.		elocity, and
11LA-E	Linear Algebra	Z,ZK	3
	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and the		-
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifica		
11MSP-E	Modeling of Systems and Processes	Z,ZK	4
	nods and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete tir		1 -
	e recursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of te		
	(MATLAB).		
11SCFZ-E	Seminar of Physics	Z	0
I	Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermod	ynamics.	1
11SEMO-E	Seminar of Electromagnetic Field and Optics	Z	0
I	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	1	1
11STAT-E	Statistics	Z,ZK	4
Definition of probab	ility, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimation.	Testing of statistica	hypothesis.
Regression and cor	relation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in linear r	egression, analysis	of variance,
	multiple regression, the use of matrices in regression.		
11X31-E	Project 1	Z	2
11X32-E	Project 2	Z	2
11X33-E	Project 3	Z	2
12X31-E	Project 1	Z	2
12X32-E	Project 2	Z	2
12X33-E	Project 3	Z	2
14AP-E	Algorithm and Programming	KZ	4
I	epresentation, algorithms (conditions, loops), high level programming languages, introduction to Python language, lists, searching a	1	1 -
	ople, dictionary), regular expressions, libraries to process date and time, set arrays, functions and procedures, working with files, ins		
	programming		
14X31-E	Project 1	Z	2
14X32-E	Project 2	Z	2
14X33-E	Project 3	Z	2
15JZ1A-E	Foreign Language - English 1	Z	3
	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	1	-
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		Liementary
15JZ2A-E	Foreign Language - English 2	Z,ZK	3
	ares and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and co	1 '	-
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles		,
15JZ3A-E	Foreign Language - English 3	Z	3
	and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty!		1
	ceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral a		
, ,	and their features; terminology.		
15JZ4A-E	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 '	-
	ceptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral a		
	and their features; terminology.		
15X31-E	Project 1	Z	2

15X33-E	Project 2	Z	2
13732-L	Project 3	Z	2
15Y1BO-E	Work Safety and Health Protection in Transportation	KZ	2
Fundamental legisla	ative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. He health insurance of home and foreign business trips, statistics, working practice.	ealth protection p	orogrammes
15Y1EH-E		KZ	2
1	European Integration within Historical Context		
	r Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its	-	
	New quality of French-German relationship - a driving power of starting European integration.	·	
15Y1HE-E	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 factors		
Creation and protec	tion of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to po	ssibilities and sk	ills of a mai
	Practical examples from the field of transportation; relevant legislature.	1/7	0
15Y1HL-E	History of Civil Aviation	KZ	2
-	A airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying		
15Y1ZV-E	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 continuit		
	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-E	Project 1	Z	2
16X32-E	Project 2	Z	2
16X33-E	Project 3	Z	2
17X31-E	Project 1	Z	2
17X32-E	Project 2	Z	2
17X33-E	Project 3	Z	2
17Y1LL-E	Logistics of Passenger and Freight Air Transport	KZ	2
ogistics airline pas	senger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial trans	port process pas	ssengers ar
	air cargo. Information systems in air transport. Global distribution systems.		
18X31-E	Project 1	Z	2
18X32-E	Project 2	Z	2
18X33-E	Project 3	Z	2
18Y1AM-E	Anatomy, Mobility and Safety of Man	KZ	2
Survey of tissues. Ar	natomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation a	and nervous syste	em. Structu
and biomechanics o	of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured m	an and his treatr	ment. Huma
	joint prostheses. Protective means and traffic safety regulations.		1
18Y1EM-E	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics	KZ	2
18Y1EM-E	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to	KZ esting of materia	2 Is. Design
18Y1EM-E	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics ble of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat	KZ esting of materia	2 Is. Design
18Y1EM-E	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics le of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.	KZ esting of materia igue and lifetime	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
18Y1EM-E The purpose and ro experimental proc 18Y1MT-E	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics ble of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat	KZ esting of materia igue and lifetime KZ	2 Ils. Design o prediction.
18Y1EM-E The purpose and ro experimental proc 18Y1MT-E Systematic overview	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials	KZ esting of materia igue and lifetime KZ composites, atte	2 Ils. Design of prediction. 2 ention is pai
18Y1EM-E The purpose and ro experimental proc 18Y1MT-E Systematic overview	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics le of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and	KZ esting of materia igue and lifetime KZ composites, atte	2 Ils. Design of prediction. 2 ention is pai
18Y1EM-E The purpose and ro experimental proc 18Y1MT-E Systematic overview to biolo 18Y1MX-E Systematic overview	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Materials in Transportation w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials used in technical design. In	KZ esting of materia igue and lifetime KZ composites, atte selection charts. KZ composites, atte	2 Ils. Design of prediction. prediction. 2 ention is paint 2 ention is paint
18Y1EM-E The purpose and re experimental proc 18Y1MT-E Systematic overview to biolo 18Y1MX-E Systematic overview to biolo	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Materials in Transportation w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Materials in Transportation w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and gical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's	KZ esting of materia igue and lifetime KZ composites, atte selection charts. KZ composites, atte selection charts.	2 prediction. 2 ention is pai
18Y1EM-E The purpose and ro experimental proc 18Y1MT-E Systematic overview to biolo 18Y1MX-E Systematic overview to biolo 18Y1PD-E	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Materials in Transportation w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Computer Simulations in Transportation	KZ esting of materia igue and lifetime KZ composites, atte selection charts. KZ composites, atte selection charts. KZ	2 prediction. 2 ention is pai 2 ention is pai
18Y1EM-E The purpose and reception experimental proce 18Y1MT-E Systematic overview to biolo 18Y1MX-E Systematic overview to biolo 18Y1MX-E Systematic overview to biolo 18Y1PD-E Principles and overview	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Materials in Transportation w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Computer Simulations in Transportation rerview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development	KZ esting of materia igue and lifetime KZ composites, atte selection charts. KZ composites, atte selection charts. KZ	2 prediction. 2 ention is pai 2 ention is pai
18Y1EM-E The purpose and ro experimental proc 18Y1MT-E Systematic overview to biolo 18Y1MX-E Systematic overview to biolo 18Y1PD-E Principles and ov	joint prostheses. Protective means and traffic safety regulations. Experimental Methods in Mechanics Dele of experimental mechanics. Sensors for mechanical testing. Overview of experimental methods. Destructive and non-destructive to redures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fat Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement. Engineering Materials w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Materials in Transportation w of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and igical materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's Computer Simulations in Transportation review of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model devel er CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary con	KZ esting of materia igue and lifetime KZ composites, atte selection charts. KZ composites, atte selection charts. KZ	2 prediction. 2 ention is pai 2 ention is pai
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21HAV-E	Weight and Balance of Aircraft	Z,ZK	3		
	s and balance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, ba ft, flight documentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity positi				
21KPSL-E	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 froi infrastructure (ground systems), which together create the necessary prerequisites for ensuring safe, efficient and economical air t	m the perspective of	-		
21KSAV-E	KSA Assessment	Z,ZK	2		
	Management of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness. W preventation and recovery training. Mental math.	-			
21LCLT-E	Human Factors in Aviation	ZK	3		
	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	petencies.	_		
21LCM-E	Aircraft Engines jine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en	Z,ZK	3 eckground		
	onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational ch		u		
21LDA1-E	Aircraft 1	Z,ZK	3		
	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic				
21LEIS-E	Aerodromes	Z,ZK	3		
	is. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Ma arkers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting systems. V				
Markings. Olgris. M	systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles.				
21LPTY-E	Aircraft Operations	ZK	2		
	Aircraft oepration for cruise, approach, final approach, missed approach, hodling, PBN, augmented GNSS, aviation charts for IF				
21LPX1-E	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 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.	0	,		
21LPX2-E	Flight Training 2	KZ	2		
Practical exercise	s for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. Th	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 related to Study field PIL (Professional Pilot) in all three years.	training and study a	all courses		
21LPX3-E	Flight Training 3	KZ	2		
ZTEL XJ-E	Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowl	1 1	2		
21LPX4-E	Flight Training 4 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowl	KZ	2		
21LPX5-E	Flight Training 5 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowl	KZ	2		
21LTA2-E	Aircraft 2	Z,ZK	2		
Manufacturers resp	onsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national star structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presu		ty of aircraft		
21LTP1-E Air Law; ICAO Do	Air Law 1 pc 7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Annexes; 965/2012	Commission regula	3 ation (EU)		
21LTP2-E	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 issu 965/2012, regulation no. 1321/2014 and ICAO Annexes, which significantly affect the form, method and structure of commercial air t	e of EC regulations			
21LVPK-E	MCC - Multicrew Cooperation	Z	2		
	is in relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situation process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation.	al awareness, decis			
21MET2-E	Meteorology 2	Z,ZK	5		
	tropical climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the str reducing visibility phenomena. Observation, weather maps, important information for flight planning.				
21MRG1-E	Meteorology 1	KZ	3		
Composition, size a	and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic pro cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-fronta		ind types of		
21OBN-E	General Navigation	ZK	5		
	de and longitude. Reference systems. Circles on the Earth and distance. Calculations. Time. Magnetism and sirections. Wind and Spe		-		
Calculations: navig	ation computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR navigation use. Navigation display. Navigation in remote and oceanic areas.	ation. Nav Log prepa	aration and		
21PKL1-E	Advanced Flying 1	KZ	4		
	ements Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Instrument flying introduction, threat and error				
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-E	Advanced Flying 2	ZK	2		
Learning objective	es are based on requirements laid down in Commission Regulation (EU) No 1178/2011, subjects 081 and 100. Multi engine aircraft a	-			
energy management, stabilized approach and landing errors, jet - performance - engine out flight, jet - handling - engine out flight go around, UPRT, volcanic ash, cold weather operations, operation manuals, MEL procedures and deviations, flight time limitation					
21PML-E	Flight Planning and Monitoring Flight planning for VFR flights for small, single- and multi-engine aeroplanes	Z,ZK	3		
1	right planning for virt ingrite for small, single and multi-engline aeropianes				

	Operational Procedures 1	Z,ZK	3
	Annex 6, PART-OPS, Air operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspa		
21PPY2-E	Operational Procedures 2	ZK	4
Flight document	ation and manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situation	is and procedures,	Runway
	contamination	714	
21PRJ1-E	Instrumentation 1	ZK	2
Basic classification	and construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measu integrated instrument systems.	irement of all data j	barameters,
21PRJ2-E	Instrumentation 2	ZK	3
	jc 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-E	Practical Flight Planning	Z,ZK	4
	ce 2. fuel planning, PDP, RIF,RCF 3. ATC FPL 4. Preflight procedure and briefing-NOTAM + weather(METAR,SIGMET) 5. Jeppesen	· .	-
	ht planning- ICAO mapa, softwary 8. IFR flight planning- theory 9. PBN- RNAV, RNP 10. IFR flight planning- softwary 11. MRJT- OFP	-	
	PET, PSR, PNR 14. practical VFR a IFR flight planning		
21RDN-E	Radionavigation	Z,ZK	3
	der (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization	-	
Area navigation (R	NAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director.	Satellite navigatio	n, systems
	and backups.		
21SBP-E	Bachelor's Thesis Seminar	Z	1
VVORK with infor	mation sources. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for thes	sis. Presentation of	thesis.
	Requirements for journal articles. Publication ethics.	7	2
21SIFR-E	IFR Communication Abbreviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symbols	∠ Standard words a	2
	hts, Radar procedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and e		•
21SVFR-E		7	4
	are based on PART FCL, part 090. It defines terms and abbreviations used in VFR communication. Phraseology and procedures in	← -standard and non	
	situations.		
21TVFR-E	Theory for VFR Training	Z,ZK	8
	based on PPL(A) theory requirements according to Part-FCL. Lectures cover topics that are necessary to commence the practical pa	, ,	ng, such as
principles of flight	, 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-E	Aircraft Performance	Z,ZK	4
Basic terms of aircr	aft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft per		take off and
	landing performance, after take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, E		
21X31-E	Project 1	Z	2
21X32-E	Project 2	Z	2
21X33-E	Project 3	Z	2
21Y1BC-E	Aviation safety and security	KZ	2
	safety and security development in aviation. Modern tools for safety and security management. Research and development of safe a	and secure system	e
21Y1BS-E	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		2
	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope procedures. Practical flights.	erational risks and	2 operational
21Y1MJ-E	n Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Ope procedures. Practical flights. Matlab for projects	erational risks and KZ	2 operational 2
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