## Study plan

## Name of study plan: Bachelor PIL (EN) Full-Time from 2024/25

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: 178 Elective courses credits: 2 Sum of credits in the plan: 180 Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 168 The role of the block: Z

Code of the group: 1S-BP-PIL-EN-23/24 Name of the group: 1st 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 7 courses Credits in the group: 30 Note on the group:

Note on the gi	•	1	r	n	· · · · · · · · · · · · · · · · · · ·	
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
21VFRC-E	VFR Communication Milan Kameník Milan Kameník	Z,ZK	4	2P+1C	Z	Z
21VFRT-E	Theory for VFR Training Filip Bart n k Filip Bart n k	Z,ZK	6	4P+4C	Z	Z
11GIE-E	Geometry Šárka Vorá ová Šárka Vorá ová Šárka Vorá ová (Gar.)	KZ	3	2P+2C+12B	Z	Z
15JP1A-E	Foreign Language - English for PIL 1 Marek Tome ek, Dana Boušová, Jitka He manová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Lenka Monková <b>Markéta Musilová</b>	Z	2	0P+2C	Z	Z

# Characteristics of the courses of this group of Study Plan: Code=1S-BP-PIL-EN-23/24 Name=1st Sem. Bachelor Full-Time PIL (EN) from 2023/24

11CAL1-E	Calculus 1	Z,ZK	7			
Sequence of real number	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n	dimensional Eukli	idean space and			
Cartesian coordinate sy	stem. 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	Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants 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	ongitude. 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 national computer track and GS. Projectional computer track and GS. Projectional computer track and GS.	vigation. Nav Log	preparation and			
use. Navigation display.	Navigation in remote and oceanic areas.					
21VFRC-E	VFR Communication	Z,ZK	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 nor	n-standard			
situations.						
21VFRT-E	Theory for VFR Training	Z,ZK	6			
Course content is based on PPL(A) theory requirements according to Part-FCL. Lectures cover topics that are necessary to commence the practical part of ATP(A) training, such as						
principles of flight, airframe and powerplant, aircraft systems, instrumentation, mass and balance, performance, air law and ATC procedures, meteorology, operational procedures,						
navigation, radionavigation, 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 trajectory of the motion, the velocity, and						
acceleration of a particl	e moving on a curved path.					
15JP1A-E	Foreign Language - English for PIL 1	Z	2			
Improvement of language skills within spoken and written form of the language with the focus on aviation English. Practice of comprehension of authentic materials. Improvement of						
pronunciation and fluency of spoken language. Aviation phraseology in combination with general English. Revision and improvement of grammar structures, syntax and vocabulary.						

Topics related to air transport and occupation of pilot and air staff.

#### Code of the group: 2S-BP-PIL-EN-23/24 Name of the group: 2nd 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:

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
21LEY1-E	Air Law 1 Radoslav Zozu ák Radoslav Zozu ák Radoslav Zozu ák (Gar.)	ZK	3	3P+0C	L	Z
21ZYT1-E	Principles of Flight 1 Vladimír Machula	Z,ZK	3	2P+1C	L	Z
15JP2A-E	Foreign Language - English for PIL 2 Marek Tome ek, Jitka He manová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Lenka Monková, Jan Feit, Barbora Horá ková, Marie Michlová,	КZ	3	0P+2C	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
21LAP1-E	Aviation English for Professional Pilot 1 Filip Havrda, Lukáš Zibner Filip Havrda	Z	2	0P+2C	L	Z

# Characteristics of the courses of this group of Study Plan: Code=2S-BP-PIL-EN-23/24 Name=2nd Sem. Bachelor Full-Time PIL (EN) from 2023/24

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.	· · ·	iption of regular				
k-dimensional surfaces in Rn, Riemannian integral over regular surfaces. Line and surface integrals of the second type, Stokes theorems, ordinary d	ifferential equation	ns 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	r regression, anal	ysis of variance,				
multiple regression, the use of matrices in regression.						
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 cre	w, determination				
of load of aircraft, flight documentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity position	on on aircarft perf	ormance.				
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	d categorisation.	Aircraft loadings.				
Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topics.						
21LEY1-E Air Law 1	ZK	3				
Air Law; ICAO Doc 7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Annexes	s; Commission re	gulation (EU)				
965/2012						
21ZYT1-E Principles of Flight 1	Z,ZK	3				
Aerodynamic drag, relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and	l pressures aroun	d wing, angle of				
attack, reactions of wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced drag, interference, devices for						
	lift and drag increase.					
	KZ	3				
lift and drag increase.	· -=	-				
lift and drag increase.       15JP2A-E       Foreign Language - English for PIL 2	entic materials. Ir	nprovement of				
lift and drag increase.         15JP2A-E       Foreign Language - English for PIL 2         Improvement of language skills within spoken and written form of the language with the focus on aviation English. Practice of comprehension of authors of the language with the focus on aviation English. Practice of comprehension of authors of the language with the focus on aviation English.	entic materials. Ir	nprovement of				
lift and drag increase.         15JP2A-E       Foreign Language - English for PIL 2         Improvement of language skills within spoken and written form of the language with the focus on aviation English. Practice of comprehension of auth pronunciation and fluency of spoken language. Aviation phraseology in combination with general English. Revision and improvement of grammar structure.	entic materials. Ir	nprovement of				
lift and drag increase.         15JP2A-E       Foreign Language - English for PIL 2         Improvement of language skills within spoken and written form of the language with the focus on aviation English. Practice of comprehension of auth pronunciation and fluency of spoken language. Aviation phraseology in combination with general English. Revision and improvement of grammar structor Topics related to air transport and occupation of pilot and air staff.	entic materials. Ir uctures, syntax ar KZ	nprovement of nd vocabulary.				

21LPX1-E	Flight Training 1	KZ	2		
Practical exercises for in	nprovement of theoretical knowledge in a range of at least PPL(A) of the objects 010 - 090 in accordance with Part FCL. The	basics of flight co	ontrol, dual		
exercises, solo flights a	nd navigation flights. This course is intended only for long-term student, who are in integrated pilots training and study all cou	rses related to Str	udy field PIL		
(Professional Pilot) in al	I three years.				
21LAP1-E	Aviation English for Professional Pilot 1	Z	2		
Exercises focused on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft construction, principles of flight, aircraft					

Code of the group: 3S-BP-PIL-EN-24/25 Name of the group: 3rd Sem. Bachelor Full-Time PIL (EN) from 2024/25 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 9 courses

engines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators procedures.

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ-E	Physics Tomáš Vít , Antonio Cammarata, Jana Kuklová, Zuzana Malá Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18B	Z	Z
21LAP2-E	Aviation English for Professional Pilot 2 Filip Havrda	Z,ZK	3	0P+4C	Z	Z
21LDA2-E	Aircraft 2 Max Chopart, Michal erný Max Chopart	Z,ZK	4	2P+1C	Z	Z
21LPTY-E	Aircraft Operations Ladislav Capoušek Ladislav Capoušek	ZK	2	2P+0C	Z	Z
21PUP1-E	Instrumentation 1 Pavel Hovorka	ZK	3	2P+0C	Z	Z
21RNV-E	Radionavigation Jan Žižka <b>Jan Žižka</b>	Z,ZK	4	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
15JZ3A-E	Foreign Language - English 3 Dana Boušová, Jitka He manová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Lenka Monková, Jan Feit, Marie Michlová, Peter Morpuss	Z	3	0P+4C	Z	Z

# Characteristics of the courses of this group of Study Plan: Code=3S-BP-PIL-EN-24/25 Name=3rd Sem. Bachelor Full-Time PIL (EN) from 2024/25

11FYZ-E	Physics	Z,ZK	5			
Kinematics, particle dyn	amics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.					
21LAP2-E	Aviation English for Professional Pilot 2	Z,ZK	3			
Exercises focused on re	petition and smoother communication within VFR and IFR communication, communication with technical staff at the airport,	a fluent conversa	tion within the			
airlines.						
21LDA2-E	Aircraft 2	Z,ZK	4			
Manufacturers responsi	bility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national s	tandards. Static	solidity of aircraft			
structures. Aeroelasticity	y. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.					
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					
21PUP1-E	Instrumentation 1	ZK	3			
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,			
integrated instrument sy	rstems.					
21RNV-E	Radionavigation	Z,ZK	4			
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.			
Area navigation (RNAV)	- 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			
Basic terms of aircraft p	erformance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft p	performance clas	s A, take off and			
landing performance, af	ter take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS.					
21LPX2-E	Flight Training 2	KZ	2			
Practical exercises for in	nprovement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. T	he basics of instr	ument flying,			
dual exercises, emergency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated pilots training and study all courses						
related to Study field PI	L (Professional Pilot) in all three years.					
15JZ3A-E	Foreign Language - English 3	Z	3			
Grammar structure and	stylistics. 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 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; termi	nology.					

### Code of the group: 4S-BP-PIL-EN-24/25 Name of the group: 4th Sem. Bachelor Full-Time PIL (EN) from 2024/25 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 10 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
21AFL1-E	Advanced Flying 1 Viktor Valenta Viktor Valenta	Z,ZK	3	2P+1C	L	Z
21MEE1-E	Meteorology 1 Milan Kameník, Iveta Kameníková Iveta Kameníková	Z,ZK	3	2P+2C	L	Z
21PML-E	Flight Planning and Monitoring Anna Polánecká Anna Polánecká	Z,ZK	3	2P+2C	L	Z
21PRJ2-E	Instrumentation 2 Pavel Hovorka Pavel Hovorka	ZK	3	2P+0C	L,Z	Z
14AP-E	Algorithm and Programming Vít Fábera, Michal Je ábek, Júlia Škovierová Vít Fábera Vít Fábera (Gar.)	KZ	4	2P+2C	L	Z
21IFRC-E	IFR Communication Milan Kamenik Milan Kameník	KZ	2	1P+1C	L	Z
21LPX3-E	Flight Training 3 Iveta Kameníková, Jakub Hospodka	KZ	2	0P+1C	L	Z
21SBU1-E	Bachelor Thesis Seminar 1 Lenka Hanáková Lenka Hanáková	Z	1	1P+0C	L	Z
15JZ4A-E	Foreign Language - English 4 Jitka He manová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Lenka Monková, Jan Feit, Barbora Horá ková, Marie Michlová, Peter Morpuss	Z,ZK	3	0P+4C	L	Z

## Characteristics of the courses of this group of Study Plan: Code=4S-BP-PIL-EN-24/25 Name=4th Sem. Bachelor Full-Time PIL (EN) from 2024/25

11EMO-E Electromagnetic Field and Optics	Z,ZK	4			
Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	2,213	-			
21AFL1-E Advanced Flying 1	Z,ZK	3			
This course supplements Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Instrument flying introduction, threat and error	1 '	-			
instrument departures, enroute flight, holdings and arrivals, instrument approaches, performance based navigation, weather consideration, flight plai	0 /				
briefings, phraseology differences, lost communication procedures, CFIT prevention, decompresion		ing, encouve			
21MEE1-E Meteorology 1	Z.ZK	3			
Composition, size and vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic	, ,	-			
cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone.	p.00000001 0100	ang ana typee er			
21PML-E Flight Planning and Monitoring	Z,ZK	3			
Flight planning for VFR flights for small, single- and multi-engine aeroplanes	_,				
21PRJ2-E Instrumentation 2	ZK	3			
Compass, gyroscopic instruments (turn indicator, attitude indicator, directional gyro), inertial instruments, recording and monitoring systems, warning		-			
(autopilot, flight director, autothrust), FMS, flight envelope protection, communication systems, flight computers	, e, e, e, e, e	, e,,, ee			
14AP-E Algorithm and Programming	KZ	4			
Computers, data representation, algorithms (conditions, loops), high level programming languages, introduction to Python language, lists, searching	and sorting algor	rithms, abstract			
data types (set, tupple, dictionary), regular expressions, libraries to process date and time, set arrays, functions and procedures, working with files, in	nstroduction into	object oriented			
programming					
21IFRC-E IFR Communication	KZ	2			
Definitions, Terms, Abbreviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and sym	ools, Standard wo	ords and phrases			
for IFR flights, Radar procedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and emerg	jency situations.				
21LPX3-E Flight Training 3	KZ	2			
Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge		·			
21SBU1-E Bachelor Thesis Seminar 1	Z	1			
Types of thesis (review, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation databases, citation styles, how					
to cite). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis methodology.					
15JZ4A-E Foreign Language - English 4	Z,ZK	3			
Grammar structure and stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty'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; terminology.					

Code of the group: 5S-BP-PIL-EN-25/26

Name of the group: 5th Sem. Bachelor Full-Time PIL (EN) from 2025/26 Requirement credits in the group: In this group you have to gain 24 credits Requirement courses in the group: In this group you have to complete 8 courses

#### Credits in the group: 24 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
21LEY2-E	Air Law 2	ZK	3	3P+0C	Z	Z
21LILE-E	Human Factors in Aviation	KZ	3	4P+0C	Z	Z
21MET2-E	Meteorology 2 Iveta Kameniková Iveta Kameníková	Z,ZK	5	2P+2C	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
21ZYT2-E	Principles of Flight 2	Z,ZK	3	2P+1C	Z	Z
21LPX4-E	Flight Training 4 Iveta Kameníková, Jakub Hospodka, Jakub Charezinski, Roman Matyáš Iveta Kameníková	KZ	2	0P+1C	Z	Z
21SBU2-E	Bachelor Thesis Seminar 2	Z	1	1P+0C	Z	Z

## Characteristics of the courses of this group of Study Plan: Code=5S-BP-PIL-EN-25/26 Name=5th Sem. Bachelor Full-Time PIL (EN) from 2025/26

10111 2023/20					
21LEY2-E	Air Law 2	ZK	3		
The course is focused of	n the issue of commercial commercial air transport in accordance with applicable European legislation. Within the course, the iss	sue of EC regulat	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 tr	ansport and trans	sportation.		
21LILE-E	Human Factors in Aviation	KZ	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.				
21MET2-E	Meteorology 2	Z,ZK	5		
Climatic zones, tropical	climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the str	atosphere, moun	tain areas,		
reducing visibility pheno	mena. Observation, weather maps, important information for flight planning.				
21PPY1-E	Operational Procedures 1	Z,ZK	3		
Annex 6, PART-OPS, Ai	r operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspace				
21PRKP-E	Practical Flight Planning	Z,ZK	4		
1. mass and balance 2.	fuel planning, PDP, RIF,RCF 3. ATC FPL 4. Preflight procedure and briefing-NOTAM + weather(METAR,SIGMET.) 5. Jeppese	n charts 6. VFR	ilight planning-		
theory 7. VFR flight plan	ning- ICAO mapa, softwary 8. IFR flight planning- theory 9. PBN- RNAV, RNP 10. IFR flight planning- softwary 11. MRJT- OFI	P 12. ETOPS a N	AT HLA 13.		
PET, PSR, PNR 14. prac	ctical VFR a IFR flight planning				
21ZYT2-E	Principles of Flight 2	Z,ZK	3		
Ways of producing thrus	t, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, pro	peller operation r	nodes, propeller		
airstream effect, gyrosco	opic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load	, manoevures, st	ability and		
controllability, transsonio	s speeds.				
21LPX4-E	Flight Training 4	KZ	2		
Deepening of theoretica	I knowledge and practical examination of progress in professional competence in pilot skills and knowledge				
21SBU2-E	Bachelor Thesis Seminar 2	Z	1		
Methodology of thesis w	riting (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of materi	als and methods	, approach to		
obtaining results, preser	ntation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and Word template.				

Code of the group: 6S-BP-PIL-EN-25/26 Name of the group: 6th Sem. Bachelor Full-Time PIL (EN) from 2025/26 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
11MSP-E	Modeling of Systems and Processes Jana Kuklová	Z,ZK	4	2P+2C	L	Z
21ELDO-E	Air Transport Economy	Z,ZK	3	3P+1C	L	Z
21KPSL-E	Communication and Surveillance Systems in Aviation	ZK	3	2P+0C	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 <b>Ladislav Capoušek</b>	Z,ZK	3	2P+1C	L	Z
21PKL2-E	Advanced Flying 2 Viktor Valenta Viktor Valenta	ZK	2	2P+0C	L,Z	Z

21PRY2-E	Operational Procedures 2	ZK	3	3P+0C	L	Z
21KSA-E	KSA Assessment	KZ	2	0P+2C	L	Z
21LPX5-E	Flight Training 5 Iveta Kameníková, Jakub Hospodka	KZ	2	0P+1C	L	Z
21LVIP-E	MCC - Multicrew Cooperation	KZ	2	2P+1C	L	Z
21SBU3-E	Bachelor Thesis Seminar 3	Z	1	1P+0C	L	Z

## Characteristics of the courses of this group of Study Plan: Code=6S-BP-PIL-EN-25/26 Name=6th Sem. Bachelor Full-Time PIL (EN) from 2025/26

11MSP-E	Modeling of Systems and Drossesson	Z,ZK	4
	Modeling of Systems and Processes and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete	,	•
	ursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use of		-
(MATLAB).		technical compu	
		7 71/	0
21ELDO-E	Air Transport Economy	Z,ZK	3
	sed in air transport. Basic microeconomic laws. Division of the economic disciplines. Economy carrier. Economic indicators in	the managemen	t of air transport.
Business activities in air			-
21KPSL-E	Communication and Surveillance Systems in Aviation	ZK	3
	udents with communication and surveillance systems both from the perspective of the air segment (aircraft systems) and fro	m the perspective	e of ground
	stems), which together create the necessary prerequisites for ensuring safe, efficient and economical air transport.		
21LCM-E	Aircraft Engines	Z,ZK	3
	eoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine		<b>.</b>
thermal cycles, construc	tion schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational of	haracteristics. Er	igine control.
21LEIS-E	Aerodromes	Z,ZK	3
Basic definitions. Applic	ability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mar	kings of movemer	nt areas.
Markings. Signs. Marker	s. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting system	s. Visual approac	h slope indicator
systems. Runway lights.	Taxiway lights. Visual aids for denoting obstacles.		
21PKL2-E	Advanced Flying 2	ZK	2
Learning objectives are	based on requirements laid down in Commission Regulation (EU) No 1178/2011, subjects 081 and 100. Multi engine aircraf	and jet aircraft c	haracteristics,
energy management, st	abilized approach and landing errors, jet - performance - engine out flight, jet - handling - engine out flight go around, UPRT,	volcanic ash, colo	d weather
operations, operation ma	anuals, MEL procedures and deviations, flight time limitation		
21PRY2-E	Operational Procedures 2	ZK	3
Flight documentation an	d manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situatio	ns and procedure	s, Runway
contamination			-
21KSA-E	KSA Assessment	KZ	2
Communication. Manag	ement of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness.	Vorkload manage	ment. Upset
preventation and recove	ry training. Mental math.		
21LPX5-E	Flight Training 5	KZ	2
Deepening of theoretica	I knowledge and practical examination of progress in professional competence in pilot skills and knowledge		
21LVIP-E	MCC - Multicrew Cooperation	KZ	2
Flight safety analysis in	relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situat	ional awareness,	decision making
*	i, effect of stress to the multi-crew performance, standard operational procedures, automation.		U
21SBU3-E	Bachelor Thesis Seminar 3	Z	1
	ign of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the	objectives of the	thesis and
• •	tests. Preparation of the presentation, principles of presentation of the thesis.		

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 Stłoukal, 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, Peter Vittek, Kate ina Grötschelová, Terézia Pilmannová, Bo Stloukal, Andrej Lališ, Vladimír Socha	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

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

Name of the block: Compulsory elective courses Minimal number of credits of the block: 4 The role of the block: PV

Code of the group: Y1-BP-PIL-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 Michal erný, Jakub Kraus, 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, formation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. Little Entente, its principles and						
goals. Europe after Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and its consequences for Europe.						
New quality of French-G	German relationship - a driving power of starting European integration.					
15Y1HE-E	Work Hygiene and Ergonomics in Traffic	KZ	2			
Basic knowledge of occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these factors on health of workers.						
Creation and protection of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to 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, evolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and cor	ntinuity of the interr	national relations
in the end of 19th century and the beginning of the 20th century. Revolutions, the causes and consequences. Scientific and technological progress,	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. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circula	ation and nervous s	system. Structure
and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injur	ed man and his tre	eatment. Human
joint prostheses. Protective 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-destruct	tive testing of mate	erials. Design of
experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement.	Fatigue and lifetim	e prediction.
Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.		
21Y1MJ-E Matlab for projects	KZ	2
The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerc	ises will be prepar	ed according to
particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improven	ment of students' N	/latlab skills.
21Y1MP-E Matlab for project-oriented study	KZ	2
The subject's syllabus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exerc	ises will be prepar	ed according to
particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improven	ment of students' N	/latlab skills.
21Y10H-E Airline Business and Operations	KZ	2
The course provides a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the org	1	-
various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of tr	-	-
a basic view of the economic aspects of air transport.		
15Y1BO-E Work Safety and Health Protection in Transportation	KZ	2
Fundamental legislative, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation	1	1
health insurance of home and foreign business trips, statistics, working practice.	in riodiai protocale	n programmoo,
15V1HL-E History of Civil Aviation	K7	2
15Y1HL-E History of Civil Aviation Aeronautics Beginnings of aircrafts beavier than air Czechoslovak aviation pioneers. Development of airports in the Czech Bepublic. World airports	KZ	2 arld Helicopters
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports	s. Airlines of the wo	-
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor	s. Airlines of the wo	orld. Helicopters.
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor 17Y1LL-E Logistics of Passenger and Freight Air Transport	s. Airlines of the wo rld.	porld. Helicopters.
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports         CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial	s. Airlines of the wo rld.	porld. Helicopters.
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world airports         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.	s. Airlines of the wo rld. KZ transport process	2 passengers and
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials	k. Airlines of the world.	2 passengers and
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	Airlines of the world.	2 passengers and
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world airports         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection	Airlines of the world.	2 passengers and 2 attention is paid
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world airports         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation	Airlines of the world.     KZ     Kransport process     KZ     and composites, a     con charts.     KZ	2 passengers and 2 attention is paid
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world airports aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world airports aviators. Classic of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers	Airlines of the world.     KZ     Kransport process     KZ     and composites, a     KZ     KZ     and composites, a	2 passengers and 2 attention is paid
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world airports         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection	k. Airlines of the world. KZ transport process KZ and composites, a con charts. KZ and composites, a con charts.	2 passengers and 2 attention is paid 2 attention is paid
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports         CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selectic         18Y1PD-E	Airlines of the world.     KZ     Kransport process     KZ     and composites, a     KZ     and composites, a     con charts.     KZ     and composites, a     con charts.     KZ	2 passengers and 2 attention is paid 2 attention is paid
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports         CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the wor         17Y1LL-E       Logistics of Passenger and Freight Air Transport         Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial air cargo. Information systems in air transport. Global distribution systems.         18Y1MT-E       Engineering Materials         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection         18Y1MX-E       Materials in Transportation         Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selecticon process is also demonstrated based on so called Ashb	k. Airlines of the world. KZ transport process KZ and composites, a on charts. KZ and composites, a on charts. KZ and composites, a on charts. KZ and composites, a on charts. KZ and composites, a on charts.	2 passengers and 2 attention is paid 2 attention is paid 2 attention of
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Name of the block: Elective courses Minimal number of credits of the block: 0 The role of the block: V

Code of the group: VP-BP-PIL-EN Name of the group: Bachelor Full-Time PIL (EN) voluntary Requirement credits in the group: Requirement courses in the group: Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11SEMO-E	Seminar of Electromagnetic Field and Optics Tomáš Vít, Antonio Cammarata, Zuzana Malá Tomáš Vít (Gar.)	Z	0	0P+2C	L	v
11SCFZ-E	Seminar of Physics Tomáš Vít , Antonio Cammarata, Jana Kuklová, Zuzana Malá <b>Tomáš Vít</b> Tomáš Vít (Gar.)	Z	0	0P+2C	Z	v

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

11SEMO-E	Seminar of Electromagnetic Field and Optics	Z	0		
Solving problems on ele	Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.				
11SCFZ-E	Seminar of Physics	Z	0		
Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.					

## List of courses of this pass:

	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
Sequence of real nur	nbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n	-dimensional Euklidea	n space and
Cartesian	coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions o	f several real variables	
11CAL2-E	Calculus 2	Z,ZK	5
Indefinite integral, Ne	ewtonian integral, Riemannian integral of the function of one variable, improper Riemannian integral, Riemannian integral in Rn	Parametric description	n of regular
k-dimensional surfa	ices 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		
11EMO-E	Electromagnetic Field and Optics	Z,ZK	4
	Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.		
11FYZ-E	Physics	Z,ZK	5
	Kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamic	S.	
11GIE-E	Geometry	KZ	3
Differential geometry	y of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory	ory of the motion, the v	elocity, and
	acceleration of a particle moving on a curved path.		1
11LA-E	Linear Algebra	Z,ZK	3
Vector spaces (linear	combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and		minants and
	their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classif		1
11MSP-E	Modeling of Systems and Processes	Z,ZK	4
	ds and algorithms as a basis for system analysis. Methods for modelling and evaluating the systems in continuous and discrete	e time domain. Laplace	e transform,
z-transform, and the	recursive algorithms in solution of differential and difference equations, as an instrument for system description. Practical use o (MATLAB).	f technical computing of	environment
11SCFZ-E		f technical computing o	environment
	(MATLAB).	Z	
	(MATLAB). Seminar of Physics	Z	
11SCFZ-E	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, there	Z nodynamics.	0
11SCFZ-E	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, there Seminar of Electromagnetic Field and Optics	Z nodynamics.	0
11SCFZ-E	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, ther Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.	Z nodynamics. Z Z,ZK	0
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11SCFZ-E 11SEMO-E 11STAT-E Definition of probabili Regression and correc 11X31-E	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, therr Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Statistics ty, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimati elation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in line	Z nodynamics. Z Z,ZK on. Testing of statistical	0 0 4 I hypothesis.
11SCFZ-E 11SEMO-E 11STAT-E Definition of probabili Regression and corre	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, therr Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Statistics ty, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimati elation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in line multiple regression, the use of matrices in regression.	Z nodynamics. Z Z,ZK on. Testing of statistical ar regression, analysis	0 0 4 hypothesis. of variance,
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11SCFZ-E         11SEMO-E         11STAT-E         Definition of probabili         Regression and corres         11X31-E         11X32-E         11X33-E         12X31-E         12X32-E         12X32-E         12X32-E         12X33-E	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, therr Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Statistics ty, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimati elation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in line multiple regression, the use of matrices in regression. Project 1 Project 2 Project 3 Project 2 Project 2 Project 2 Project 3	Z nodynamics. Z Z,ZK on. Testing of statistical ar regression, analysis Z Z Z Z Z Z Z Z	0 4 hypothesis. of variance, 2 2 2 2 2 2 2 2 2 2 2 2 2
11SCFZ-E         11SEMO-E         11STAT-E         Definition of probabili         Regression and corres         11X31-E         11X32-E         11X33-E         12X31-E         12X32-E         12X32-E         12X33-E         14AP-E	(MATLAB). Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, therr Seminar of Electromagnetic Field and Optics Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics. Statistics ty, random variable and its description, known distributions, random vector, function of random variable. Methods of point estimati elation, linear regression, correlation coefficient, coefficient of determination, the general linear model, statistical inference in line multiple regression, the use of matrices in regression. Project 1 Project 2 Project 3 Project 2 Project 3 Algorithm and Programming	Z nodynamics. Z,ZK on. Testing of statistical ar regression, analysis Z Z Z Z Z Z Z Z KZ	0 4 hypothesis. of variance, 2 2 2 2 2 2 2 2 2 4
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15JP1A-E	Foreign Language - English for PIL 1	Z	2
	uage skills within spoken and written form of the language with the focus on aviation English. Practice of comprehension of authe		
pronunciation and flu	iency of spoken language. Aviation phraseology in combination with general English. Revision and improvement of grammar stru	ctures, syntax and	vocabulary
	Topics related to air transport and occupation of pilot and air staff.		
15JP2A-E	Foreign Language - English for PIL 2	KZ	3
1 0	uage skills within spoken and written form of the language with the focus on aviation English. Practice of comprehension of authe		
pronunciation and flu	ency of spoken language. Aviation phraseology in combination with general English. Revision and improvement of grammar stru	ctures, syntax and	vocabulary
	Topics related to air transport and occupation of pilot and air staff.	7	0
15JZ3A-E	Foreign Language - English 3	Z	3
	nd stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty' ptive and communicative skills; widening the vocabulary. Basic kinds of compositions. Presentations of own findings in both oral a		
iprovement in perce	and their features; terminology.	and whiten form. Te	chnical lex
15JZ4A-E	Foreign Language - English 4	Z,ZK	3
1	d stylistics. Conversational and specialised topics selected according to the language group level and with regard to the Faculty's	1 '	-
	ptive 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
15X32-E	Project 2	Z	2
15X33-E	Project 3	Z	2
		KZ	_
15Y1BO-E	Work Safety and Health Protection in Transportation ive, definition of terms, risks and possible health damage, working conditions and health protection with focus on transportation. I		
unuamentai legislat	health insurance of home and foreign business trips, statistics, working practice.	realin protection p	ogramme
15Y1EH-E		KZ	2
	European Integration within Historical Context mation of new states. Europe and the powers, League of Nations. European policy in the 1920s. Fascism, nacism, communism. I	1	1
-	Hitler's getting to power, system of bilateral agreements. Decline of the LN. Rearrangement of powers during WWII. Cold war and	-	-
salo. Europe aller I	New quality of French-German relationship - a driving power of starting European integration.		
15Y1HE-E	Work Hygiene and Ergonomics in Traffic	KZ	2
1	occupational hygiene and ergonomics, and their application in transport. Working environment factors, and the influence of these		1
-	on of working conditions that do not damage public health. Mutual links: man-machine-environment. Adaptation of technology to p		
	Practical examples from the field of transportation; relevant legislature.		
15Y1HL-E	History of Civil Aviation	KZ	2
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eronautics. Beginnin CSA a 15Y1ZV-E	gs of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports. A airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flyi East-West dichotomy: Prelude to the Cold War rolution of the "West" and "East" from the 1500s. Focus on the history in the period between 1850 nad 1950. Milestones and contin	irlines of the world. ng in the world. KZ uity of the internation	Helicopte
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18Y1PS-E	Computer Simulations in Mechanics	KZ	2
	verview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model deve		
geometry from oth	er CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary con	ditions and applica	ation of the
20X31-E	load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.	Z	2
20X31-E 20X32-E	Project 1 Project 2	Z	2
20X32-E 20X33-E	Project 2 Project 3	Z	2
20733-E 21AFL1-E	· · · · · · · · · · · · · · · · · · ·	Z,ZK	2
	Advanced Flying 1 ements Learning objectives laid down in Commission Regulation (EU) No 1178/2011. Instrument flying introduction, threat and error		-
	tures, enroute flight, holdings and arrivals, instrument approaches, performance based navigation, weather consideration, flight plann	•	
	briefings, phraseology differences, lost communication procedures, CFIT prevention, decompresion	0	
21CON-E	Navigation Calculations	KZ	2
Projection of map	s; times - UTC, Zulu, LT; positioning; sunrise and sunset; distance calculation; projection; maps and symbols; declination; speed; wind	I components and	wind drift;
	VFR route selection; position plotting.		-
21ELDO-E	Air Transport Economy	Z,ZK	3
Economic terminol	ogy used in air transport. Basic microeconomic laws. Division of the economic disciplines. Economy carrier. Economic indicators in the Business activities in air transport.	management of a	ur transport.
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 position		
21IFRC-E	IFR Communication	KZ	2
Definitions, Terms,	Abbreviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symbols	, Standard words a	and phrases
for IFR flig	hts, Radar procedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and e	mergency situation	ns.
21KPSL-E	Communication and Surveillance Systems in Aviation	ZK	3
The course acqu	Jaints students with communication and surveillance systems both from the perspective of the air segment (aircraft systems) and from		of ground
	infrastructure (ground systems), which together create the necessary prerequisites for ensuring safe, efficient and economical air to	-	0
21KSA-E	KSA Assessment Management of flight path. Automation of flight Leadership and teamwork. Broblem solving, Decision making, Situation awarness, We		2
Communication.	Management of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness. Wo preventation and recovery training. Mental math.	nkioau manageme	ent. Opset
21LAP1-E	Aviation English for Professional Pilot 1	Z	2
	d on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft construction	- 1	
e	engines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators	procedures.	
21LAP2-E	Aviation English for Professional Pilot 2	Z,ZK	3
Exercises focused	on repetition and smoother communication within VFR and IFR communication, communication with technical staff at the airport, a l	luent conversation	within the
	airlines.		-
21LCM-E	Aircraft Engines	Z,ZK	3
	jine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine en- onstruction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational ch	-	-
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		Ū
21LDA2-E	Aircraft 2	Z,ZK	4
Manufacturers resp	oonsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan		ty of aircraft
	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur	-	-
21LEIS-E	Aerodromes	Z,ZK	3
	is. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Mar 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.		
21LEY1-E	Air Law 1	ZK	3
	c 7300; ICAO Doc 7500 and 9626; International Organizations: ICAO, IATA, EASA, EUROCONTROL; airworthiness; ICAO Annexes;	1	
	965/2012		
21LEY2-E	Air Law 2	ZK	3
	ed on the issue of commercial commercial air transport in accordance with applicable European legislation. Within the course, the issue	-	-
	965/2012, regulation no. 1321/2014 and ICAO Annexes, which significantly affect the form, method and structure of commercial air tr		
21LILE-E	Human Factors in Aviation	KZ	3
Human lactors in	aviation. Breathing, atmosphere. Heart and circulation. Radiation. Human sensory organs, nervous system. Vision, hearing, illusions. wakefulness and sleep. Information processing, human error. Cockpit management. Behaviour and workload. Automation. Core com		ie, laligue,
21LPTY-E	Aircraft Operations	ZK	2
2121112	Aircraft oppration for cruise, approach, final approach, missed approach, hodling, PBN, augmented GNSS, aviation charts for IF	1	2
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	1	
exercises, solo fli	ights and navigation flights. This course is intended only for long-term student, who are in integrated pilots training and study all cours	es related to Study	y field PIL
	(Professional Pilot) in all three years.	·	-
21LPX2-E	Flight Training 2	KZ	2
	is for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. The nergency procedures, descents and navigation flights. This course is intended only for long-term student, who are in integrated pilots is		
3001 0701 01303, 011	related to Study field PIL (Professional Pilot) in all three years.	and study	an 0001000
21LPX3-E	Flight Training 3	KZ	2
	Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge		·

21LPX4-E 21LPX5-E			
	Flight Training 4 Plight Training 4 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowled	KZ ge	2
ZILFAJ-E	Flight Training 5 Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowled	KZ	2
21LVIP-E	MCC - Multicrew Cooperation	KZ	2
1	s in relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situational a		1
r	process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation.		1
21MEE1-E	Meteorology 1	Z,ZK	3
Composition, size a	nd vertical structure of the atmosphere. QNH, QFE, QFF, QNE, density and height measurements. Wind, moisture and adiabatic proce cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cy	-	and types
21MET2-E	Meteorology 2	Z,ZK	5
Climatic zones, tr	opical climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the strate reducing visibility phenomena. Observation, weather maps, important information for flight planning.	osphere, moun	tain areas,
210BN-E	General Navigation	ZK	5
The Earth: latitud	e and longitude. Reference systems. Circles on the Earth and distance. Calculations. Time. Magnetism and sirections. Wind and Speec tion computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR navigatio use. Navigation display. Navigation in remote and oceanic areas.		-
21PKL2-E	Advanced Flying 2	ZK	2
1	s are based on requirements laid down in Commission Regulation (EU) No 1178/2011, subjects 081 and 100. Multi engine aircraft and		
υ,	nent, stabilized approach and landing errors, jet - performance - engine out flight, jet - handling - engine out flight go around, UPRT, vo operations, operation manuals, MEL procedures and deviations, flight time limitation	•	
21PML-E	Flight Planning and Monitoring	Z,ZK	3
I	Flight planning for VFR flights for small, single- and multi-engine aeroplanes		-
21PPY1-E	Operational Procedures 1	Z,ZK	3
21PRJ2-E	Annex 6, PART-OPS, Air operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspace	ZK	
-	Instrumentation 2 ic instruments (turn indicator, attitude indicator, directional gyro), inertial instruments, recording and monitoring systems, warning syste (autopilot, flight director, autothrust), FMS, flight envelope protection, communication systems, flight computers		3 PWS), AFC
		Z,ZK	4
21PRKP-E	Practical Flight Planning e 2. fuel planning, PDP, RIF,RCF 3. ATC FPL 4. Preflight procedure and briefing-NOTAM + weather(METAR,SIGMET) 5. Jeppesen ch		-
	t planning- ICAO mapa, softwary 8. IFR flight planning- theory 9. PBN- RNAV, RNP 10. IFR flight planning- softwary 11. MRJT- OFP 1 PET, PSR, PNR 14. practical VFR a IFR flight planning PET, PSR, PNR 14. practical VFR a IFR flight planning		
21PRY2-E	Operational Procedures 2	ZK	3
1	tion and manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situations contamination		-
21PUP1-E	Instrumentation 1	ZK	3
1	ind construction of flight instruments, electric systems, power plant sensors and instruments, airframe sensors and instruments, measure integrated instrument systems.		aparamete
21RNV-E	Radionavigation	Z,ZK	4
	der (VDF), ADF, VOR and Doppler VOR, DME, ILS, MLS, ground ATC radar, weather Radar, SSR and transponder. Radar utilization for VAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director. S	-	
	and backups.		
	Dechalar Theois Cominer 4	7	4
21SBU1-E	Bachelor Thesis Seminar 1	Z	1
ypes of thesis (revi	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation dat	tabases, citatio	1
ypes of thesis (revi to cite	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation dat ). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis	tabases, citatio methodology.	n styles, he
vpes of thesis (revi to cite 21SBU2-E	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation dat ). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis Bachelor Thesis Seminar 2	tabases, citatio methodology. Z	n styles, h
ypes of thesis (revi to cite 21SBU2-E Methodology of the	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation of a ). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis Bachelor Thesis Seminar 2	tabases, citatio methodology. Z and methods, a	n styles, ho
ypes of thesis (revi to cite 21SBU2-E Methodology of the obt	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation of a ). Analyzing the state of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis Bachelor Thesis Seminar 2	tabases, citatio methodology. Z and methods, a d template.	n styles, ho
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ypes of thesis (rev to cite 21SBU2-E Methodology of the obt 21SBU3-E	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation and basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation and basic and basic research writing). Defining the limitations of the state of the art. Introduction to the thesis Bachelor Thesis Seminar 2 sis writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of materials aning results, presentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and WorrBachelor Thesis Seminar 3 ic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the objectives and hypotheses.	tabases, citatio methodology. Z and methods, a d template. Z	n styles, ho 1 approach to
vpes of thesis (revi to cite 21SBU2-E Methodology of the obt 21SBU3-E Formal and graph	ew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation and basic research, thesis dealing with design proposals). Working with citation sources (citation sources, citation and basic research writing). Defining the limitations of the state of the art. Introduction to the thesis Bachelor Thesis Seminar 2 Bachelor Thesis Seminar 2 Bachelor Thesis conclusions. Basics of LaTeX, working with LaTeX and Working with the state of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the observation of the presentation, principles of presentation of the thesis.	tabases, citatio methodology. Z and methods, a d template. Z ojectives of the	n styles, ho 1 approach to 1 thesis and
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21Y1MJ-E	Matlab for projects	KZ	2
The subject's sylla	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will be prepared	according to
particular examp	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	nt of students' N	atlab skills.
21Y1MP-E	Matlab for project-oriented study	KZ	2
The subject's sylla	bus is focused on the problem-solving during bachelor's thesis preparation and it is based on students' requests. Individual exercises	will be prepared	according to
particular examp	les, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement	nt of students' N	atlab skills.
21Y1OH-E	Airline Business and Operations	KZ	2
The course provide	s a comprehensive view of the commercial, operational and transportation activities of air transport companies. It focuses on the organiza	tional structure	of companies
arious aspects of t	heir strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transpo	ortation process	es. It provide
	a basic view of the economic aspects of air transport.		
21Y1RZ-E	Human Resources Management	KZ	2
The position of I	numan resources in the organization and related disciplines file. Substance, importance and challenges of human resources manager	nent. Internal ar	d external
environment of hun	nan resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and rem	uneration of sta	f. Positioning
	dismissal and redundancies of employees. Education of employees. Planning career management.		
	dismissa and redundancies of employees. Education of employees. Failining career management.		
21ZYT1-E	Principles of Flight 1	Z,ZK	3
		,	-
Aerodynamic drag,	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre 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	ssures around v	ving, angle c
Aerodynamic drag, attack, reactions of	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre	ssures around v	ving, angle o
Aerodynamic drag,	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre 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	ssures around v	ving, angle o
Aerodynamic drag, attack, reactions of 21ZYT2-E	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase.	ssures around v drag, interferenc Z,ZK	ving, angle c e, devices fo
Aerodynamic drag, attack, reactions of 21ZYT2-E Ways of producing	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase. Principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load,	ssures around o drag, interference Z,ZK er operation mo	ving, angle c e, devices fo 3 des, propelle
Aerodynamic drag, attack, reactions of 21ZYT2-E Ways of producing	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase. Principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell	ssures around o drag, interference Z,ZK er operation mo	ving, angle c e, devices fo 3 des, propelle
Aerodynamic drag, attack, reactions of 21ZYT2-E Ways of producing	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase. Principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load,	ssures around v drag, interference Z,ZK er operation mo manoevures, s Z	ving, angle c e, devices fo 3 des, propelle
Aerodynamic drag, attack, reactions of 21ZYT2-E Nays of producing airstream effect,	Principles of Flight 1           relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and prewing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase.           Principles of Flight 2           thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load, controllability, transsonic speeds.	ssures around v drag, interference Z,ZK er operation mo manoevures, s	ving, angle c e, devices fo 3 des, propelle tability and
Aerodynamic drag, attack, reactions of 21ZYT2-E Ways of producing airstream effect, 22X31-E	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre- wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase. Principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load, controllability, transsonic speeds. Project 1	ssures around v drag, interference Z,ZK er operation mo manoevures, s Z	ving, angle c e, devices fo 3 des, propelle ability and 2
Aerodynamic drag, attack, reactions of 21ZYT2-E Ways of producing airstream effect, 22X31-E 22X32-E	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre- wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase. Principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load, controllability, transsonic speeds. Project 1 Project 2 Project 3	ssures around v drag, interference Z,ZK er operation mo manoevures, s Z Z	ving, angle c e, devices fo des, propelle tability and 2 2
Aerodynamic drag, attack, reactions of 21ZYT2-E Ways of producing airstream effect, 22X31-E 22X32-E 22X33-E	Principles of Flight 1 relation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow and pre- wing in air flow, lift and drag of a wing and an aircraft, coefficient of lift and drag, critical angle of attack, wing with final span, induced lift and drag increase. Principles of Flight 2 thrust, propeller, jet propulsion, thrust and momentum, propulsion efficiency, aerodynamics of fixed and variable pitch propeller, propell gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load, controllability, transsonic speeds. Project 1 Project 2	ssures around of drag, interference Z,ZK er operation mo manoevures, s Z Z Z Z	ving, angle c e, devices for des, propelle tability and 2 2 2 2

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