Recomended pass through the study plan

Name of the pass: Bachelor Full-Time PIL (EN) from 2022/23

Faculty/Institute/Others:
Department:
Pass through the study plan: Bachelor PIL (EN) Full-Time from 2022/23
Branch of study guranteed by the department: Welcome page
Guarantor of the study branch:
Program of study: Professional Pilot
Type of study: Bachelor full-time
Note on the pass:

Coding of roles of courses and groups of courses:
P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):
KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

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** *Ondřej Navrátil, Magdalena Hykšová **Magdalena Hykšová** Ondřej Navrátil (Gar.)*	Z,ZK	7	2P+4C+22B	Z	z
21OBN-E	**General Navigation** *Iveta Kameníková, Denisa Svobodová, Paul Rousseau **Paul Rousseau***	ZK	5	4P+0C	Z	z
11GIE-E	**Geometry** *Šárka Voráčová **Šárka Voráčová** Šárka Voráčová (Gar.)*	KZ	3	2P+2C+12B	Z	z
11LA-E	**Linear Algebra** *Martina Bečvářová **Martina Bečvářová** Martina Bečvářová (Gar.)*	Z,ZK	3	2P+1C+10B	Z	z
21TVFR-E	**Theory for VFR Training**	Z,ZK	8	4P+4C	Z	z
21SVFR-E	**VFR Communication**	Z	4	2P+1C	Z	z

Number of semester: 2

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
21LTP1-E	**Air Law 1**	KZ	3	3P+0C	L	z
21LDA1-E	**Aircraft 1**	Z,ZK	3	2P+1C	L	z
11CAL2-E	**Calculus 2** ***Magdalena Hykšová***	Z,ZK	5	2P+3C	L	z
21LPX1-E	**Flight Training 1**	KZ	2	0P+1C	L	z
15JZ1A-E	**Foreign Language - English 1**	Z	3	0P+4C+10B	L	z
21PRJ1-E	**Instrumentation 1**	ZK	2	2P+0C	L	z
21CON-E	**Navigation Calculations**	KZ	2	0P+2C	L	z
21ZKL1-E	**Principles of Flight 1**	ZK	3	2P+1C	L	z
11STAT-E	**Statistics**	Z,ZK	4	2P+2C	L	z
21HAV-E	**Weight and Balance of Aircraft** ***Denisa Svobodová***	Z,ZK	3	2P+2C	L	z

Number of semester: 3

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
21EKL-E	**Air Transport Economy**	Z,ZK	3	2P+1C	Z	z

21LPTY-E	**Aircraft Operations** *Ladislav Capoušek* ***Ladislav Capoušek***	ZK	2	2P+0C	Z	z
21VL-E	**Aircraft Performance** *Denisa Svobodová, Anna Polánecká* ***Anna Polánecká***	Z,ZK	4	2P+2C	Z	z
21LTA2-E	**Aircraft 2**	Z,ZK	2	2P+1C	Z	z
21APL1-E	**Aviation English 1 for Professional Pilot**	Z	3	0P+4C	Z	z
21LPX2-E	**Flight Training 2** *Iveta Kameníková, Jakub Hospodka, Jakub Charezinski, Roman Matyáš* ***Iveta Kameníková***	KZ	2	0P+1C	Z	z
15JZ2A-E	**Foreign Language - English 2**	Z,ZK	3	0P+4C	Z	z
21PRJ2-E	**Instrumentation 2**	ZK	3	2P+0C	L,Z	z
11FYZ-E	**Physics** *Tomáš Vítů, Antonio Cammarata, Jana Kuklová, Zuzana Malá* ***Jana Kuklová*** *Pavel Demo (Gar.)*	Z,ZK	5	2P+2C+18B	Z	z
21RDN-E	**Radionavigation**	Z,ZK	3	3P+1C	Z	z
11SCFZ-E	**Seminar of Physics** *Tomáš Vítů, Antonio Cammarata, Jana Kuklová, Zuzana Malá* ***Tomáš Vítů*** *Tomáš Vítů (Gar.)*	Z	0	0P+2C	Z	v

Number of semester: 4

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**
21PKL1-E	**Advanced Flying 1**	KZ	4	2P+2C	L	z
21APL2-E	**Aviation English 2 for Professional Pilot**	Z,ZK	3	0P+4C	L	z
11EMO-E	**Electromagnetic Field and Optics** ***Tomáš Vítů***	Z,ZK	4	2P+1C	L	z
21PML-E	**Flight Planning and Monitoring** ***Anna Polánecká***	Z,ZK	3	2P+2C	L	z
21LPX3-E	**Flight Training 3**	KZ	2	0P+1C	L	z
21LCLT-E	**Human Factors in Aviation**	ZK	3	3P+0C	L	z
21SIFR-E	**IFR Communication**	Z	2	1P+1C	L	z
21MRG1-E	**Meteorology 1**	KZ	3	2P+2C	L	z
11MSP-E	**Modeling of Systems and Processes** ***Jana Kuklová***	Z,ZK	4	2P+2C	L	z
11SEMO-E	**Seminar of Electromagnetic Field and Optics** ***Tomáš Vítů***	Z	0	0P+2C	L	ZP
X1-BP-PIL-EN-22/23	**Projekty Bc. prezenční PIL (EN) od 2022/23** *11X31-E,12X31-E,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 3	Min/Max 6/6			ZP

Number of semester: 5

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**
21PKL2-E	**Advanced Flying 2**	ZK	2	2P+0C	L,Z	z
21LTP2-E	**Air Law 2**	Z,ZK	3	3P+0C	Z	z
21SBP-E	**Bachelor's Thesis Seminar** ***Vladimír Socha***	Z	1	0P+1C	Z	z
21LPX4-E	**Flight Training 4** *Iveta Kameníková, Jakub Hospodka, Jakub Charezinski, Roman Matyáš* ***Iveta Kameníková***	KZ	2	0P+1C	Z	z
15JZ3A-E	**Foreign Language - English 3** *Dana Boušová, Jitka Heřmanová, Peter Morpuss, Marie Michlová, Markéta Musilová, Lenka Monková, Jan Feit, Eva Rezlerová, Markéta Vojanová Marek Tomeček (Gar.)*	Z	3	0P+4C	Z	z
21MET2-E	**Meteorology 2** *Iveta Kameníková* ***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** *Jakub Hospodka, Ota Hajzler* ***Ota Hajzler***	Z,ZK	4	2P+2C	Z	z

21ZKL2-E	**Principles of Flight 2**	ZK	3	2P+1C	Z	Z
X1-BP-PIL-EN-22/23	**Projekty Bc. prezenční PIL (EN) od 2022/23** *11X31-E,12X31-E,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 3	Min/Max 6/6			ZP
Y1-BP-PIL-EN-24/25	**PVP-B Bc. prezenční PIL (EN) od 2024/25** *15Y1EH-E,15Y1HE-E,..... (see the list of groups below)*	Min. cours. 2 Max. cours. 2	Min/Max 4/4			PV

Number of semester: 6

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
21LEIS-E	**Aerodromes** ***Ladislav Capoušek***	Z,ZK	3	2P+1C	L	Z
21LCM-E	**Aircraft Engines**	Z,ZK	3	2P+1C	L	Z
14AP-E	**Algorithm and Programming**	KZ	4	2P+2C	L	Z
21KPSL-E	**Communication and Surveillance Systems in Aviation**	ZK	3	2P+0C	L	Z
21LPX5-E	**Flight Training 5**	KZ	2	0P+1C	L	Z
15JZ4A-E	**Foreign Language - English 4** *Marek Tomeček (Gar.)*	Z,ZK	3	0P+4C	L	Z
21KSAV-E	**KSA Assessment**	Z,ZK	2	0P+2C	L	Z
21LVPK-E	**MCC - Multicrew Cooperation**	Z	2	2P+1C	L	Z
21PPY2-E	**Operational Procedures 2** ***Ladislav Capoušek***	ZK	4	3P+0C	L	Z
X1-BP-PIL-EN-22/23	**Projekty Bc. prezenční PIL (EN) od 2022/23** *11X31-E,12X31-E,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 3	Min/Max 6/6			ZP
Y1-BP-PIL-EN-24/25	**PVP-B Bc. prezenční PIL (EN) od 2024/25** *15Y1EH-E,15Y1HE-E,..... (see the list of groups below)*	Min. cours. 2 Max. cours. 2	Min/Max 4/4			PV

List of groups of courses of this pass with the complete content of members of individual groups

Kód	Name of the group of courses and codes of members of this group (for specification see here or below the list of courses)	Completion	Credits	Scope	Semester	Role
X1-BP-PIL-EN-22/23	**Projekty Bc. prezenční PIL (EN) od 2022/23**	**Min. cours. 3 Max. cours. 3**	**Min/Max** 6/6			**ZP**

11X31-E	Project 1	12X31-E	Project 1	14X31-E	Project 1
15X31-E	Project 1	16X31-E	Project 1	17X31-E	Project 1
18X31-E	Project 1	20X31-E	Project 1	21X31-E	Project 1
22X31-E	Project 1	23X31-E	Project 1	11X32-E	Project 2
12X32-E	Project 2	14X32-E	Project 2	15X32-E	Project 2
16X32-E	Project 2	17X32-E	Project 2	18X32-E	Project 2
20X32-E	Project 2	21X32-E	Project 2	22X32-E	Project 2
23X32-E	Project 2	11X33-E	Project 3	12X33-E	Project 3
14X33-E	Project 3	15X33-E	Project 3	16X33-E	Project 3
17X33-E	Project 3	18X33-E	Project 3	20X33-E	Project 3
21X33-E	Project 3	22X33-E	Project 3	23X33-E	Project 3

Y1-BP-PIL-EN-24/25	**PVP-B Bc. prezenční PIL (EN) od 2024/25**	**Min. cours. 2**	**Min/Max** 4/4			**PV**

			Max. cours. 2		
15Y1EH-E	European Integration within Hist ...	15Y1HE-E	Work Hygiene and Ergonomics in T ...	15Y1ZV-E	East-West dichotomy: Prelude to ...
18Y1AM-E	Anatomy, Mobility and Safety of ...	18Y1EM-E	Experimental Methods in Mechanic ...	21Y1MJ-E	Matlab for projects
21Y1MP-E	Matlab for project-oriented stud ...	21Y1OH-E	Airline Business and Operations	15Y1BO-E	Work Safety and Health Protectio ...
15Y1HL-E	History of Civil Aviation	17Y1LL-E	Logistics of Passenger and Freig ...	18Y1MT-E	Engineering Materials
18Y1MX-E	Materials in Transportation	18Y1PD-E	Computer Simulations in Transpor ...	18Y1PS-E	Computer Simulations in Mechanic ...
21Y1BC-E	Aviation safety and security	21Y1BS-E	Unmanned aircraft systems 1	21Y1RZ-E	Human Resources Management
00Y1XB	Active participation in a scient ...				

List of courses of this pass:

Code	Name of the course	Completion	Credits
00Y1XB	Active participation in a scientific project, workshop, short-term trip abroad	KZ	2
11CAL1-E	Calculus 1	Z,ZK	7
Sequence of real numbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Geometric properties of n-dimensional Euklidean space and Cartesian coordinate system. Geometric meaning of the differential of functions several real variables, differential calculus of functions of several 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. 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			
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, thermodynamics.			
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 particle moving on a curved path.			
11LA-E	Linear Algebra	Z,ZK	3
Vector spaces (linear combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their solvability. Determinants and their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification.			
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, 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).			
11SCFZ-E	Seminar of Physics	Z	0
Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.			
11SEMO-E	Seminar of Electromagnetic Field and Optics	Z	0
Solving problems on electric and magnetic field, electromagnetic field, optics and basics of solid-state physics.			
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.			
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
Computers, data representation, algorithms (conditions, loops), high level programming languages, introduction to Python language, lists, searching and sorting algorithms, abstract data types (set, tupple, dictionary), regular expressions, libraries to process date and time, set arrays, functions and procedures, working with files, instroduction into object oriented 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
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.			
15JZ2A-E	Foreign Language - English 2	Z,ZK	3
Grammatical structures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and communicative skills. Elementary stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.			

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; terminology.			
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.			
15X31-E	Project 1	Z	2
15X32-E	Project 2	Z	2
15X33-E	Project 3	Z	2
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. Health protection programmes, health insurance of home and foreign business trips, statistics, working practice.			
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-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.			
15Y1HL-E	History of Civil Aviation	KZ	2
Aeronautics. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports. Airlines of the world. Helicopters. CSA airplanes. Famous aviators. Classic era of aviation. Golden era of civil aviation. Supersonic flying. Modern era of civil aviation. Flying in the world.			
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 continuity of the international 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 consequences. 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
Logistics airline passenger and cargo. Aircraft and airport terminals for passenger and cargo transport. Airlines in terms of logistics systems. Aerial transport process passengers and 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. Anatomical structure and growth of bones. Articular joint. Remodelling of bone tissue. Anatomical structure of muscles. Blood circulation and nervous system. Structure and biomechanics of muscular-skeletal system. Injury of human organs and musculo-skeletal system during traffic accidents. Mobility of ill and injured man and his treatment. 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-destructive testing of materials. Design of experimental procedures and sample preparation. Tensile and bending tests. Electrical resistance strain gages. Optical based strain measurement. Fatigue and lifetime prediction. Instrumented hardness testing. Introduction to electron microscopy. Errors in measurement.			
18Y1MT-E	Engineering Materials	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and composites, attention is paid to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection charts.			
18Y1MX-E	Materials in Transportation	KZ	2
Systematic overview of main classes of materials used in technical design. In addition to main classes of materials, i. e. metals, ceramics, polymers and composites, attention is paid to biological materials and to biomimetics. Integral approach to material selection process is also demonstrated based on so called Ashby's selection charts.			
18Y1PD-E	Computer Simulations in Transportation	KZ	2
Principles and overview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development and adaptation of geometry from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and application of the load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.			
18Y1PS-E	Computer Simulations in Mechanics	KZ	2
Principles and overview of programs for stress analysis of structures. Numerical methods in mechanics, finite element method. Geometric model development and adaptation of geometry from other CAE systems. Assignment of material properties. The types of elements and their use. Discretization of solid model. Boundary conditions and application of the load. Basic tasks of structural and modal analysis. Introduction to complex nonlinear problems.			
20X31-E	Project 1	Z	2
20X32-E	Project 2	Z	2
20X33-E	Project 3	Z	2
21APL1-E	Aviation English 1 for Professional Pilot	Z	3
Exercises focused on continuous reading specialized texts, vocabulary extension of technical English, terminology in the sphere of aircraft construction, principles of flight, aircraft engines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators procedures.			

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.			
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.			
21EKL-E	Air Transport Economy	Z,ZK	3
Economic terminology used in air transport. Basic microeconomic laws. Division of the economic disciplines. Economy carrier. Economic indicators in the management of air transport. Business activities in air transport.			
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 aircarft performance.			
21KPSL-E	Communication and Surveillance Systems in Aviation	ZK	3
The course acquaints students with communication and surveillance systems both from the perspective of the air segment (aircraft systems) and from the perspective of ground infrastructure (ground systems), which together create the necessary prerequisites for ensuring safe, efficient and economical air transport.			
21KSAV-E	KSA Assessment	Z,ZK	2
Communication. Management of flight path. Automation of flight. Leadership and teamwork. Problem solving. Decision making. Situation awarness. Workload management. Upset preventation and recovery training. Mental math.			
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.			
21LCM-E	Aircraft Engines	Z,ZK	3
Aircraft piston engine, theoretical background, operational characteristics and construction schemes. Propellers, operational characterictics. Turbine engine, theoretical background, thermal cycles, construction schemes, operational characteristics. Turbojet and turbofan engines, basic construction modules, and their operational characteristics. Engine control.			
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.			
21LEIS-E	Aerodromes	Z,ZK	3
Basic definitions. Applicability. Airport design. Reference code. Declared distances of runways (RWY). Taxiways and aprons. Clearway. Stopway. Markings of movement areas. Markings. Signs. Markers. Visual aids for denoting obstacles. Obstacle restriction, removal. Visual aids for navigation, lights, approach lighting systems. Visual approach slope indicator systems. Runway lights. Taxiway lights. Visual aids for denoting obstacles.			
21LPTY-E	Aircraft Operations	ZK	2
Aircraft oepration for cruise, approach, final approach , missed approach, hodling, PBN, augmented GNSS, aviation charts for IFR flight			
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.			
21LPX2-E	Flight Training 2	KZ	2
Practical exercises for improvement of theoretical knowledge in a range MEP land and IFR from the relevant subjects in accordance with Part FCL. The basics of instrument 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 PIL (Professional Pilot) in all three years.			
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	Flight Training 4	KZ	2
Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge			
21LPX5-E	Flight Training 5	KZ	2
Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge			
21LTA2-E	Aircraft 2	Z,ZK	2
Manufacturers responsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national standards. Static solidity of aircraft structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.			
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			
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 issue of EC regulations is analyzed in detail File no. 965/2012, regulation no. 1321/2014 and ICAO Annexes, which significantly affect the form, method and structure of commercial air transport and transportation.			
21LVPK-E	MCC - Multicrew Cooperation	Z	2
Flight safety analysis in relation to human factor. MCC - basic principles, phases and methods within the area of air transport. CRM - leadership, situational awareness, decision making process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation.			
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 stratosphere, mountain areas, reducing visibility phenomena. Observation, weather maps, important information for flight planning.			
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.			
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 Speed: Course, heading, track. Calculations: navigation computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR navigation. Nav Log preparation and use. Navigation display. Navigation in remote and oceanic areas.			

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			
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 aircraft and jet aircraft characteristics, 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	Z,ZK	3
Flight planning for VFR flights for small, single- and multi-engine aeroplanes			
21PPY1-E	Operational Procedures 1	Z,ZK	3
Annex 6, PART-OPS, Air operator, Aircraft operation, Operating procedures, Airplane equipment, Flight management, Airspace			
21PPY2-E	Operational Procedures 2	ZK	4
Flight documentation and manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situations and procedures, Runway contamination			
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.			
21PRJ2-E	Instrumentation 2	ZK	3
Compass, gyroscopic instruments (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			
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. Jeppesen charts 6. VFR flight planning-theory 7. VFR flight planning- ICAO mapa, softwary 8. IFR flight planning- theory 9. PBN- RNAV, RNP 10. IFR flight planning- softwary 11. MRJT- OFP 12. ETOPS a NAT HLA 13. PET, PSR, PNR 14. practical VFR a IFR flight planning			
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 utilization for navigation during the flight. Area navigation (RNAV) - general philosophy, gauges and equipment, indication and sensors for RNAV, VOR/DME (RNAV). Autopilot and flight director. Satellite navigation, systems and backups.			
21SBP-E	Bachelor's Thesis Seminar	Z	1
Work with information sources. Citation, citation formats. The methodology of writing the thesis. Presentation of results. Formal requirements for thesis. Presentation of thesis. Requirements for journal articles. Publication ethics.			
21SIFR-E	IFR Communication	Z	2
Definitions, Terms, Abbreviations, Q-codes, Transport message categories, Transmission technique,, Transmission of letters, numbers, time and symbols, Standard words and phrases for IFR flights, Radar procedural phraseology, Standard phraseology and Morse code, Practical IFR radiotelephony procedures in normal and emergency situations.			
21SVFR-E	VFR Communication	Z	4
Course contents are based on PART FCL, part 090. It defines terms and abbreviations used in VFR communication. Phraseology and procedures in standard and non-standard situations.			
21TVFR-E	Theory for VFR Training	Z,ZK	8
Course content is based on PPL(A) theory requirements according to Part-FCL. Lectures cover topics that are necessary to commence the practical 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.			
21VL-E	Aircraft Performance	Z,ZK	4
Basic terms of aircraft performance, basic characteristic speeds, runway characteristics, single and multiengine aircraft performance class B, aircraft performance class A, take off and landing performance, after take off and missed approach climb, noise abatement procedures, range of aircraft, drift down, MEL, ETOPS.			
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
History of safety and security development in aviation. Modern tools for safety and security management. Research and development of safe and secure systems.			
21Y1BS-E	Unmanned aircraft systems 1	KZ	2
Unmanned Aviation Development. Aircraft design. Legislation in force in the Czech Republic. Planning and execution of the flight. Airspace division. Operational risks and operational procedures. Practical flights.			
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 exercises will be prepared according to particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement of students' Matlab 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 exercises will be prepared according to particular examples, based on actual students' needs and suggestions. The subject will have a flexible form, which is expected to bring an improvement of students' Matlab skills.			
21Y1OH-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 organizational structure of companies, various aspects of their strategy, economic and operational indicators. It introduces students in detail to operational processes and the essentials of transportation processes. It provides a basic view of the economic aspects of air transport.			
21Y1RZ-E	Human Resources Management	KZ	2
The position of human resources in the organization and related disciplines file. Substance, importance and challenges of human resources management. Internal and external environment of human resource management. Human resource planning. Search, recruitment and selection of employees. Motivation, evaluation and remuneration of staff. Positioning, dismissal and redundancies of employees. Education of employees. Planning career management.			
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.			

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, propeller operation modes, propeller airstream effect, gyroscopic effect, balance of forces in horizontal flight, glide and landing, performances, take off an climb, acceleration, positive load, manoevures, stability and controllability, transsonic speeds.			
22X31-E	Project 1	Z	2
22X32-E	Project 2	Z	2
22X33-E	Project 3	Z	2
23X31-E	Project 1	Z	2
23X32-E	Project 2	Z	2
23X33-E	Project 3	Z	2

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