# Recomended pass through the study plan

## Name of the pass: Bachelor Full-Time PIL (CS) from 2024/25

Faculty/Institute/Others:
Department:
Pass through the study plan: Bachelor PIL (CS) Full-Time from 2024/25
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 | **Calculus 1** *Olga Vraštilová, Tomáš Třasák, Magdalena Hykšová, Bohumil Kovář, Ondřej Navrátil **Bohumil Kovář** Ondřej Navrátil (Gar.)* | Z,ZK | 7 | 2P+4C+22B | Z | z |
| 15JP1A | **Foreign Language - English for PIL 1** *Marek Tomeček, Dana Boušová, Peter Morpuss, Lenka Monková, Marie Michlová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Jitka Heřmanová, .....* | Z | 2 | 0P+2C | Z | z |
| 11GIE | **Geometry** *Oldřich Hykš, Pavel Provinský, Šárka Voráčová **Oldřich Hykš** Oldřich Hykš (Gar.)* | KZ | 3 | 2P+2C+12B | Z | z |
| 11LA | **Linear Algebra** *Pavel Provinský, Lucie Kárná, Martina Bečvářová **Martina Bečvářová** Martina Bečvářová (Gar.)* | Z,ZK | 3 | 2P+1C+10B | Z | z |
| 21OBN | **General Navigation** *Radoslav Zozuľák **Radoslav Zozuľák*** | ZK | 5 | 4P+0C | Z | z |
| 21VFRC | **VFR Communication** *Milan Kameník **Milan Kameník*** | Z,ZK | 4 | 2P+1C | Z | z |
| 21VFRT | **Theory for VFR Training** *Ladislav Capoušek **Ladislav Capoušek*** | Z,ZK | 6 | 4P+4C | 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 |
|---|---|---|---|---|---|---|
| 11CAL2 | **Calculus 2** *Olga Vraštilová, Tomáš Třasák, Magdalena Hykšová, Ondřej Navrátil, Oldřich Hykš **Magdalena Hykšová** Ondřej Navrátil (Gar.)* | Z,ZK | 5 | 2P+3C+20B | L | z |
| 15JP2A | **Foreign Language - English for PIL 2** *Marek Tomeček, Peter Morpuss, Lenka Monková, Marie Michlová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Jitka Heřmanová, Jan Feit, .....* | KZ | 3 | 0P+2C | L | z |
| 21LDA1 | **Aircraft 1** *Karel Mündel **Karel Mündel** Vladimír Plos (Gar.)* | Z,ZK | 3 | 2P+1C | L | z |
| 21LAP1 | **Aviation English for Professional Pilot 1** *Lukáš Zibner, Filip Havrda **Filip Havrda*** | Z | 2 | 0P+2C | L | z |
| 21LEY1 | **Air Law 1** *Radoslav Zozuľák **Radoslav Zozuľák** Radoslav Zozuľák (Gar.)* | ZK | 3 | 3P+0C | L | z |
| 21LPX1 | **Flight Training 1** *Iveta Kameníková, Jakub Hospodka* | KZ | 2 | 0P+1C | Z,L | z |
| 21CON-E | **Navigation Calculations** *Milan Kameník, Paul Rousseau **Milan Kameník*** | KZ | 2 | 0P+2C | L | z |
| 11STAT | **Statistics** *Pavel Provinský, Evženie Uglickich, Pavla Pecherková, Michal Matowicki, Natálie Blahitka, Ivan Nagy, Jana Kuklová **Pavla Pecherková** Evženie Uglickich (Gar.)* | Z,ZK | 4 | 2P+2C+12B | L | z |

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| 21HAV-E | **Weight and Balance of Aircraft**<br>*Ota Hajzler **Denisa Svobodová** Anna Polánecká (Gar.)* | Z,ZK | 3 | 2P+2C | L | z |
| 21ZYT1 | **Principles of Flight 1**<br>*Přemysl Vávra, Jakub Trýb **Přemysl Vávra** Vladimír Socha (Gar.)* | Z,ZK | 3 | 2P+1C | L | z |

## Number of semester: 3

| Code | Name of the course / Name of the group of courses<br>***(in case of groups of courses the list of codes of their members)***<br>*Tutors, **authors** and guarantors (gar.)* | Completion | Credits | Scope | Semester | Role |
|---|---|---|---|---|---|---|
| 21LPTY-E | **Aircraft Operations**<br>*Ladislav Capoušek **Ladislav Capoušek*** | ZK | 2 | 2P+0C | Z | z |
| 21VL-E | **Aircraft Performance**<br>*Denisa Svobodová **Denisa Svobodová*** | Z,ZK | 4 | 2P+2C | Z | z |
| 15JZ3A | **Foreign Language - English 3**<br>*Dana Boušová, Peter Morpuss, Lenka Monková, Marie Michlová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Jitka Heřmanová, Jan Feit* | Z | 3 | 0P+4C | Z | z |
| 11FYZ | **Physics**<br>*Oldřich Hykš, Jana Kuklová, Pavel Demo, Zuzana Malá, Tomáš Vítů **Jana Kuklová** Pavel Demo (Gar.)* | Z,ZK | 5 | 2P+2C+18B | Z | z |
| 21LDA2 | **Aircraft 2**<br>*Karel Mündel **Karel Mündel*** | Z,ZK | 4 | 2P+1C | Z | z |
| 21LAP2 | **Aviation English for Professional Pilot 2**<br>*Lukáš Zibner **Lukáš Zibner*** | Z,ZK | 3 | 0P+4C | Z | z |
| 21LPX2 | **Flight Training 2**<br>*Iveta Kameníková, Jakub Hospodka, Jakub Charezinski, Roman Matyáš **Iveta Kameníková*** | KZ | 2 | 0P+1C | L,Z | z |
| 21PUP1 | **Instrumentation 1**<br>*Pavel Hovorka* | ZK | 3 | 2P+0C | Z | z |
| 21RNV | **Radionavigation**<br>*Milan Kameník **Milan Kameník*** | Z,ZK | 4 | 3P+1C | Z | z |
| 11SCFZ | **Seminar of Physics**<br>*Oldřich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vítů **Zuzana Malá** Zuzana Malá (Gar.)* | Z | 0 | 0P+2C | Z | v |

## Number of semester: 4

| Code | Name of the course / Name of the group of courses<br>***(in case of groups of courses the list of codes of their members)***<br>*Tutors, **authors** and guarantors (gar.)* | Completion | Credits | Scope | Semester | Role |
|---|---|---|---|---|---|---|
| 21AFL1-E | **Advanced Flying 1**<br>*Viktor Valenta **Viktor Valenta*** | Z,ZK | 3 | 2P+1C | L | z |
| 14AP | **Algorithm and Programming**<br>*Vít Fábera, Michal Jeřábek **Michal Jeřábek** Vít Fábera (Gar.)* | KZ | 4 | 2P+2C | L | z |
| 15JZ4A | **Foreign Language - English 4**<br>*Peter Morpuss, Lenka Monková, Marie Michlová, Eva Rezlerová, Markéta Musilová, Markéta Vojanová, Jitka Heřmanová, Jan Feit, Barbora Horáčková* | Z,ZK | 3 | 0P+4C | L | z |
| 11EMO | **Electromagnetic Field and Optics**<br>*Oldřich Hykš, Jana Kuklová, Zuzana Malá, Tomáš Vítů **Zuzana Malá** Pavel Demo (Gar.)* | Z,ZK | 4 | 2P+1C | L | z |
| 21PML-E | **Flight Planning and Monitoring**<br>*Anna Polánecká **Anna Polánecká*** | Z,ZK | 3 | 2P+2C | L | z |
| 21LPX3 | **Flight Training 3**<br>*Iveta Kameníková, Jakub Hospodka* | KZ | 2 | 0P+1C | L | z |
| 21MEE1 | **Meteorology 1**<br>*Iveta Kameníková **Iveta Kameníková*** | Z,ZK | 3 | 2P+2C | L | z |
| 21PRJ2 | **Instrumentation 2**<br>*Pavel Hovorka **Pavel Hovorka*** | ZK | 3 | 2P+0C | L,Z | z |
| 21SBU1 | **Bachelor Thesis Seminar 1**<br>*Lenka Hanáková **Lenka Hanáková** Lenka Hanáková (Gar.)* | Z | 1 | 1P+0C | L | ZP |
| 21IFRC | **IFR Communication**<br>*Milan Kameník **Milan Kameník*** | KZ | 2 | 1P+1C | L | z |
| 11SEMO | **Seminar of Electromagnetic Field and Optics**<br>*Oldřich Hykš, Zuzana Malá, Tomáš Vítů **Zuzana Malá** Zuzana Malá (Gar.)* | Z | 0 | 0P+2C | L | z |
| X1-BP-PIL-CS-22/23 | **Projekty Bc. prezenční PIL (CS) od 2022/23**<br>*11X31,12X31,..... (see the list of groups below)* | Min. cours. 3<br>Max. cours. 3 | Min/Max 6/6 | | | ZP |

## Number of semester: 5

| Code | Name of the course / Name of the group of courses<br>*(in case of groups of courses the list of codes of their members)*<br>*Tutors,* ***authors*** *and guarantors (gar.)* | Completion | Credits | Scope | Semester | Role |
|---|---|---|---|---|---|---|
| 21LEY2 | **Air Law 2** | ZK | 3 | 3P+0C | Z | Z |
| 21LPX4 | **Flight Training 4**<br>*Iveta Kameníková, Jakub Hospodka, Jakub Charezinski, Roman Matyáš* ***Iveta Kameníková*** | KZ | 2 | 0P+1C | Z | Z |
| 21LILE | **Human Factors in Aviation** | KZ | 3 | 4P+0C | Z | Z |
| 21MET2 | **Meteorology 2**<br>*Iveta Kameníková* ***Iveta Kameníková*** | Z,ZK | 5 | 2P+2C | L,Z | Z |
| 21PPY1-E | **Operational Procedures 1**<br>*Ladislav Capoušek* ***Ladislav Capoušek*** | Z,ZK | 3 | 2P+1C | Z | Z |
| 21PRKP-E | **Practical Flight Planning**<br>*Jakub Hospodka, Anna Polánecká* ***Jakub Hospodka*** | Z,ZK | 4 | 2P+2C | Z | Z |
| 21SBU2 | **Bachelor Thesis Seminar 2**<br>*Vladimír Socha, Lenka Hanáková* ***Vladimír Socha*** | Z | 1 | 1P+0C | Z | ZP |
| 21ZYT2 | **Principles of Flight 2**<br>*Přemysl Vávra, Jakub Trýb* ***Jakub Trýb*** | Z,ZK | 3 | 2P+1C | Z | Z |
| X1-BP-PIL-CS-22/23 | **Projekty Bc. prezenční PIL (CS) od 2022/23**<br>*11X31,12X31,..... (see the list of groups below)* | Min. cours. 3<br>Max. cours. 3 | Min/Max 6/6 | | | ZP |
| Y1-BP-PIL-CS-24/25 | **PVP-B Bc. prezenční PIL (CS) od 2024/25**<br>*15Y1EH,15Y1HE,..... (see the list of groups below)* | Min. cours. 2<br>Max. cours. 2 | Min/Max 4/4 | | | PV |

Number of semester: 6

| Code | Name of the course / Name of the group of courses<br>*(in case of groups of courses the list of codes of their members)*<br>*Tutors,* ***authors*** *and guarantors (gar.)* | Completion | Credits | Scope | Semester | Role |
|---|---|---|---|---|---|---|
| 21PKL2-E | **Advanced Flying 2**<br>*Viktor Valenta* ***Viktor Valenta*** | ZK | 2 | 2P+0C | L,Z | Z |
| 21ELDO | **Air Transport Economy** | Z,ZK | 3 | 3P+1C | L | Z |
| 21KPSL | **Communication and Surveillance Systems in Aviation**<br>*Stanislav Pleninger* ***Stanislav Pleninger*** | ZK | 3 | 2P+0C | L | Z |
| 21KSA | **KSA Assessment** | KZ | 2 | 0P+2C | L | Z |
| 21LVIP | **MCC - Multicrew Cooperation** | KZ | 2 | 2P+1C | L | Z |
| 21LCM | **Aircraft Engines**<br>*Tomáš Parýzek, Daniel Hanus, Vladimír Machula* ***Daniel Hanus*** | Z,ZK | 3 | 2P+1C | Z,L | Z |
| 21LEIS | **Aerodromes**<br>*Ladislav Capoušek, Slobodan Stojić, Petr Líkař* ***Ladislav Capoušek*** *Slobodan Stojić (Gar.)* | Z,ZK | 3 | 2P+1C | L | Z |
| 21LPX5 | **Flight Training 5**<br>*Iveta Kameníková, Jakub Hospodka* | KZ | 2 | 0P+1C | L | Z |
| 11MSP | **Modeling of Systems and Processes**<br>*Bohumil Kovář, Lucie Kárná* ***Bohumil Kovář*** *Bohumil Kovář (Gar.)* | Z,ZK | 4 | 2P+2C+12B | L | Z |
| 21PRY2-E | **Operational Procedures 2** | ZK | 3 | 3P+0C | L | Z |
| 21SBU3 | **Bachelor Thesis Seminar 3**<br>*Lenka Hanáková* ***Lenka Hanáková*** | Z | 1 | 1P+0C | L | ZP |
| X1-BP-PIL-CS-22/23 | **Projekty Bc. prezenční PIL (CS) od 2022/23**<br>*11X31,12X31,..... (see the list of groups below)* | Min. cours. 3<br>Max. cours. 3 | Min/Max 6/6 | | | ZP |

## 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-CS-22/23 | Projekty Bc. prezenční PIL (CS) od 2022/23 | Min. cours. 3<br>Max. cours. 3 | Min/Max 6/6 | | | ZP |

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

| Y1-BP-PIL-CS-24/25 | PVP-B Bc. prezenční PIL (CS) od 2024/25 | Min. cours. 2<br>Max. cours. 2 | Min/Max 4/4 | | | PV |
|---|---|---|---|---|---|---|

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

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## 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 | 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. Indefinite integral, Newton integral, Riemann integral, improper Riemann integral. First-order differential equations, linear differential equations. | | | |
| 11CAL2 | Calculus 2 | Z,ZK | 5 |
| Linear differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface integrals. | | | |
| 11EMO | Electromagnetic Field and Optics | Z,ZK | 4 |
| Electric field. Electric current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics. | | | |
| 11FYZ | Physics | Z,ZK | 5 |
| Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current. | | | |
| 11GIE | Geometry | KZ | 3 |
| Differential geometry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet`s trihedron. Kinematics - a curve as a trajectory of the motion, the velocity, and acceleration of a particle moving on a curved path. | | | |
| 11LA | 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 | Modeling of Systems and Processes | Z,ZK | 4 |
| System and subsystem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differential and differential equations. Linear and nonlinear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function. Stability of LTI systems. Discretization of continuous systems. System interconnection. | | | |
| 11SCFZ | Seminar of Physics | Z | 0 |
| Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics. | | | |
| 11SEMO | 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 | Statistics | Z,ZK | 4 |
| Basics of probability Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametric tests Nonparametric tests Regression and correlation analysis | | | |
| 11X31 | Project 1 | Z | 2 |

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|---|---|---|---|
| 11X32 | Project 2 | Z | 2 |
| 11X33 | Project 3 | Z | 2 |
| 12X31 | Project 1 | Z | 2 |
| 12X32 | Project 2 | Z | 2 |
| 12X33 | Project 3 | Z | 2 |
| 14AP | Algorithm and Programming | KZ | 4 |
| 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 | Project 1 | Z | 2 |
| 14X32 | Project 2 | Z | 2 |
| 14X33 | Project 3 | Z | 2 |
| 15JP1A | 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. | | | |
| 15JP2A | Foreign Language - English for PIL 2 | KZ | 3 |
| 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. | | | |
| 15JZ3A | 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 | 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 | Project 1 | Z | 2 |
| 15X32 | Project 2 | Z | 2 |
| 15X33 | Project 3 | Z | 2 |
| 15Y1BO | 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 | 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 | 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 | History of Civil Aviation | KZ | 2 |
| Beginnings of flying, development of aircrafts lighter than air. Beginnings of aircrafts heavier than air. Czechoslovak aviation pioneers. Development of airports in the Czech Republic. World airports. Famous aviators. Helicopters. CSA airplanes. Development of aircrafts in Czechoslovakia between the years 1945-1989. Classic era of aviation. Golden era of civil aviation. Modern era of civil aviation. Airline companies. Supersonic flying. | | | |
| 15Y1ZV | 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 | Project 1 | Z | 2 |
| 16X32 | Project 2 | Z | 2 |
| 16X33 | Project 3 | Z | 2 |
| 17X31 | Project 1 | Z | 2 |
| 17X32 | Project 2 | Z | 2 |
| 17X33 | Project 3 | Z | 2 |
| 17Y1LL | Logistics of Passenger and Freight Air Transport | KZ | 2 |
| Logistics airline 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 | Project 1 | Z | 2 |
| 18X32 | Project 2 | Z | 2 |
| 18X33 | Project 3 | Z | 2 |
| 18Y1AM | 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. | | | |

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| 18Y1EM | 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 | 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. | | | |
| 18Y1PD | Computer Simulations in Transportation | KZ | 2 |
| Principles and overview of tools 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 | Computer Simulations in Mechanics | KZ | 2 |
| Principles and overview of tools 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 | Project 1 | Z | 2 |
| 20X32 | Project 2 | Z | 2 |
| 20X33 | Project 3 | Z | 2 |
| 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 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 | | | |
| 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. | | | |
| 21ELDO | Air Transport Economy | Z,ZK | 3 |
| 21HAV-E | Weight and Balance of Aircraft | Z,ZK | 3 |
| Basic terms of mass and balance, basic aircraft masses, weighing and maximum aircrafts masses, overloading of aircraft, standard weights of passenger, baggage and crew, determination of load of aircraft, flight documentation - loadsheet, trimsheet, securing of load, determination of centre of gravity, influence of centre of gravity position on aircarft performance. | | | |
| 21IFRC | IFR Communication | KZ | 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. | | | |
| 21KPSL | 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. | | | |
| 21KSA | KSA Assessment | KZ | 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. | | | |
| 21LAP1 | 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 engines, instruments and systems, analyzes relating to topics of air traffic, operational procedures, relevant legislation and operators procedures. | | | |
| 21LAP2 | 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 fluent conversation within the airlines. | | | |
| 21LCM | 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 | 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. | | | |
| 21LDA2 | Aircraft 2 | Z,ZK | 4 |
| 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. | | | |
| 21LEIS | 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. | | | |
| 21LEY1 | Air Law 1 | ZK | 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. | | | |
| 21LEY2 | Air Law 2 | 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. | | | |
| 21LILE | 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. | | | |
| 21LPTY-E | Aircraft Operations | ZK | 2 |
| Aircraft oepration for cruise, approach, final approach , missed approach, hodling, PBN, augmented GNSS, aviation charts for IFR flight | | | |

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| 21LPX1 | Flight Training 1 | KZ | 2 |
| Practical exercises for improvement of theoretical knowledge in a range of at least PPL(A) of the objects 010 - 090 in accordance with Part FCL. 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 | 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 | Flight Training 3 | KZ | 2 |
| Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge | | | |
| 21LPX4 | Flight Training 4 | KZ | 2 |
| Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge | | | |
| 21LPX5 | Flight Training 5 | KZ | 2 |
| Deepening of theoretical knowledge and practical examination of progress in professional competence in pilot skills and knowledge | | | |
| 21LVIP | 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, situational awareness, decision making process, communication, effect of stress to the multi-crew performance, standard operational procedures, automation. | | | |
| 21MEE1 | 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 processes. Creating and types of cloud, fog, haze. Precipitation. Types of air masses, atmospheric fronts. Distribution of pressure, cyclones, anticyclones, non-frontal cyclone. | | | |
| 21MET2 | Meteorology 2 | Z,ZK | 5 |
| Climatic zones, tropical climatology, meteorological situation of mid-latitudes. Icing, turbulence, wind shear, thunderstorms, tornadoes, flying in the stratosphere, mountain areas, reducing visibility phenomena. Observation, weather maps, important information for flight planning. | | | |
| 21OBN | General Navigation | ZK | 5 |
| The Earth: latitude and longitude. Reference systems. Circles on the Earth and distance. Calculations. Time. Magnetism and sirections. Wind and Speed: Course, heading, track. Calculations: navigation computer conversions, TAS, rates. Calculations: 1 in 60 and navigation computer track and GS. Projections. Charts. VFR navigation. Nav Log preparation and use. Navigation display. Navigation in remote and oceanic areas. | | | |
| 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 | | | |
| 21PRJ2 | 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 | | | |
| 21PRY2-E | Operational Procedures 2 | ZK | 3 |
| Flight documentation and manuals, Icing and protection of the aircraft against icing, noise abatement procedures, Abnormal and emergency situations and procedures, Runway contamination | | | |
| 21PUP1 | Instrumentation 1 | ZK | 3 |
| Basic construction principles of instrumentation, electronic displays, basics of measurement - sensitivity and errors, engine instrumentation (pressure gauges, thermometers, fuel quantity and fuel flow measurement, torque and EPR measurement), indication in other aircraft systems (position, fire and icing indication, vibration monitoring, pressurisation system monitoring, aerometric instruments (sensors, altimeter, air speed indicator, VSI, ADC). | | | |
| 21RNV | 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 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. | | | |
| 21SBU1 | 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. | | | |
| 21SBU2 | Bachelor Thesis Seminar 2 | Z | 1 |
| Methodology of thesis writing (introduction, analysis of the current state, specification of the problem, objectives and hypotheses). Definition of materials and methods, approach to obtaining results, presentation and discussion of results, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and Word template. | | | |
| 21SBU3 | Bachelor Thesis Seminar 3 | Z | 1 |
| Formal and graphic design of the thesis. Data collection and presentation, basic statistical reasoning, validation of results and designs. Achieving the objectives of the thesis and evaluation of hypothesis tests. Preparation of the presentation, principles of presentation of the thesis. | | | |
| 21VFRC | VFR Communication | Z,ZK | 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. | | | |
| 21VFRT | 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. | | | |

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| 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 | Project 1 | Z | 2 |
| 21X32 | Project 2 | Z | 2 |
| 21X33 | Project 3 | Z | 2 |
| 21Y1BC | 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 | 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. | | | |
| 21Y1MP | 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 | 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 | 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. | | | |
| 21ZYT1 | 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 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. | | | |
| 21ZYT2 | Principles of Flight 2 | Z,ZK | 3 |
| Static & dynamic longitudinal stability, neutral point, location of centre of gravity, static directional & lateral stability, dynamic directional & lateral stability, control pitch (longitudinal), yaw (directional) & roll (lateral), roll/yaw interaction, trimming, speed of sound, Mach number, compressibility, shock waves, critical Mach number, aerodynamic heating, operating limitations, manoeuvring envelope, gust-load diagram. | | | |
| 22X31 | Project 1 | Z | 2 |
| 22X32 | Project 2 | Z | 2 |
| 22X33 | Project 3 | Z | 2 |
| 23X31 | Project 1 | Z | 2 |
| 23X32 | Project 2 | Z | 2 |
| 23X33 | Project 3 | Z | 2 |

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