

Study plan

Name of study plan: PL nav.prez.23/24 (pro program PL)

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Air Traffic Control and Management

Type of study: Follow-up master full-time

Required credits: 70

Elective courses credits: 50

Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses

Minimal number of credits of the block: 54

The role of the block: Z

Code of the group: 1.S.NPPL 22/23

Name of the group: 1.sem.nav.prez.PL (od) 22/23 (program PL)

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 7 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 |
|--------|--|------------|---------|-----------|----------|------|
| 11APAS | Applied Statistics Evženie Uglickich, Pavla Pecherková Pavla Pecherková | Z,ZK | 4 | 2P+2C+12B | Z | z |
| 11MMJ | Mathematical Models and their Applications Evženie Uglickich, Pavla Pecherková, Sárka Voráková, Ivan Nagy, Michal Matowicki Pavla Pecherková Evženie Uglickich (Gar.) | Z,ZK | 4 | 2P+2C+12B | Z | z |
| 21BILD | Safety Engineering in Aviation Natalia Guskova, Kateřina Grötschelová, Andrej Lališ Andrej Lališ | Z,ZK | 4 | 2P+2C+12B | Z | z |
| 21CNSS | CNS Systems Stanislav Pleninger, Jakub Steiner Stanislav Pleninger | Z,ZK | 5 | 3P+2C+16B | Z | z |
| 21LETS | Airport Petr Líka, Sébastien Lán, Petr Had, Jiří Volt, Slobodan Stoji Slobodan Stoji | Z,ZK | 4 | 1P+2C+12B | Z | z |
| 21PEKL | Principles and Models in Air Transport Economics Peter Vittek Peter Vittek | Z,ZK | 5 | 4P+2C+16B | Z | z |
| 15J2A1 | Language - English 1 Barbora Horáková, Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tomek, Markéta Musilová, | Z | 2 | 0P+2C+10B | Z | z |

Characteristics of the courses of this group of Study Plan: Code=1.S.NPPL 22/23 Name=1.sem.nav.prez.PL (od) 22/23 (program PL)

| | | | |
|--|--|------|---|
| 11APAS | Applied Statistics | Z,ZK | 4 |
| Descriptive statistics, data preprocessing, discretize continuous data. Hypothesis testing - continuous and discrete variables. Regression and correlation analysis. Multivariable methods - multiple regression analysis, logistic regression analysis, ROC curve, MANOVA, PCA, Factor analysis. Power analysis, preparation, processing and evaluation of the experiment. | | | |
| 11MMJ | Mathematical Models and their Applications | Z,ZK | 4 |
| System. Regression, discrete and logistic models. Bayesian estimation of model parameters. Parameter estimation of normal regression, discrete and logistic models. Classification with logistic model. One-step and multi-step prediction with regression and discrete models. State model. State estimation. Kalman filter. Control with regression and discrete models. | | | |
| 21BILD | Safety Engineering in Aviation | Z,ZK | 4 |
| The course is focused on understanding the issue of safety, learning how to assess new systems in terms of safety and acquiring principles of safety management. Students will learn explaining accidents and incident causes and bridge their theoretical knowledge with practical problems of air transport. | | | |
| 21CNSS | CNS Systems | Z,ZK | 5 |
| Course provides full technical informations about CNS (communication, navigation, surveillance) systems used in aviation. Systems are presented in perspective of future development. | | | |
| 21LETS | Airport | Z,ZK | 4 |
| Methods of designing new airports and developing existing ones. Connection of the airport to the surrounding infrastructure. Airport economics. Detailed look at the development of movement areas. Certification of airside movement areas and procedures according to EASA CS-ADR-DSN. Development planning - design, preparation and regulatory basis. Environmental aspects of airport operations. | | | |

| | | | |
|---|--|------|---|
| 21PEKL | Principles and Models in Air Transport Economics | Z,ZK | 5 |
| The course contains the most important and typical models on which the economics of air transport is based. It covers the principles of regulation, airline infrastructure models, market structure, analyses airline costs, and looks in detail at the low-cost and charter airline model. It also focuses on airline alliances, air cargo, airline strategies and the economic principles of safety and security. | | | |
| 15J2A1 | Language - English 1 | Z | 2 |
| Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. | | | |

Code of the group: 2.S.NPPL 22/23

Name of the group: 2.sem.nav.prez.PL (od) 22/23 (program PL)

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 6 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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|-----------|----------|------|
| 21AFM | Air Traffic Management <i>Terézia Pilmannová Terézia Pilmannová Jakub Kraus (Gar.)</i> | Z,ZK | 5 | 3P+2C+16B | L | z |
| 21MULD | Managerial Challenges in Air Transport <i>Peter Vittek Peter Vittek (Gar.)</i> | Z,ZK | 5 | 3P+2C+14B | L | z |
| 21PLET | Airport Operations <i>Sébastien Lán, Petr Had, Jiří Volt Slobodan Stoji (Gar.)</i> | Z,ZK | 5 | 2P+2C+12B | L | z |
| 21SPOL | Aircraft Technology Reliability <i>Natalia Guskova, Kateřina Grötschelová, Oldřich Štumbauer Andrej Lališ (Gar.)</i> | Z,ZK | 4 | 2P+1C+12B | L | z |
| 21PAM1 | Programming and Modelling 1 <i>Vladimír Socha, Lenka Hanáková Vladimír Socha (Gar.)</i> | KZ | 5 | 2P+4C+16B | L | z |
| 15JBA2 | Language - English 2 <i>Barbora Horáková, Jitka Heřmanová, Dana Boušová, Lenka Monková, Peter Morpuss, Markéta Vojanová, Marie Michlová, Marek Tomek, Markéta Musilová,</i> | Z | 2 | 0P+2C+10B | L | z |

Characteristics of the courses of this group of Study Plan: Code=2.S.NPPL 22/23 Name=2.sem.nav.prez.PL (od) 22/23 (program PL)

| | | | |
|--|--|------|---|
| 21AFM | Air Traffic Management | Z,ZK | 5 |
| Current ATM system and its functional blocks. View of ATM data (technical architecture and configuration, transmission systems and networks). Data exchange with neighboring ATM systems. Monitoring systems and technical supervision. ATM simulation. ATM conceptions and strategies for next years. EUROCONTROL - CFMU. FAB. ATS's - AOC's data applications. | | | |
| 21MULD | Managerial Challenges in Air Transport | Z,ZK | 5 |
| The course contains a list of basic managerial tasks in aviation. The basic managerial tasks are quality assurance and operational safety, marketing operations, marketing context implementation, airline network management, fleet management and revenue management. The core disciplines also include project management, cost management and project resource planning and management. | | | |
| 21PLET | Airport Operations | Z,ZK | 5 |
| Planning, design and modelling of airport processes in airside, landside and terminal buildings. Impact of infrastructure and equipment on airport capacity. Available tools and practices for increasing capacity. Operational analytics, capacity and traffic load forecasting. Purpose and development of an airport masterplan. | | | |
| 21SPOL | Aircraft Technology Reliability | Z,ZK | 4 |
| Subject deals with tuition of separate attributes of reliability (no failure, vitality, maintainability, and so on) and main criterions of safety of production and working of aerospace engineering. General legalities are in the framework of tuition demonstrated on the example of calculation of reliability of integral characteristics of materials and they are practical illustration of its security in The Czech Police Aviation Department. | | | |
| 21PAM1 | Programming and Modelling 1 | KZ | 5 |
| Harmonic signals, their generation. Real signals, sampling theorem, aliasing. Signal filtering. Fourier transform (FT), discrete Fourier transform (DFT), fast Fourier transform (FFT). Spectrum estimation, spectral power density. Image - basic processing methods, 2D Fourier transform, noise filtering, edge detection, linear and non-linear methods, brightness transforms, geometric transforms, image compression. | | | |
| 15JBA2 | Language - English 2 | Z | 2 |
| Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. | | | |

Name of the block: Semestrální projekt

Minimal number of credits of the block: 8

The role of the block: ZP

Code of the group: XN PL 1-4 22/23

Name of the group: Projekty nav. 1.-4.sem (od) 22/23 programu PL (PRE i KOMBI)

Requirement credits in the group: In this group you have to gain 8 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 8

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|--------|---|------------|---------|----------|----------|------|
| 11XN1 | Master Project 1 <i>Ivan Nagy</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 12XN1 | Master Project 1 <i>Zuzana Ľarská, Dagmar Koárková, Iva Šturmová, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ondrej Trešl, David Vodák, Tomáš Javoík,</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 14XN1 | Master Project 1 | Z | 2 | 0P+2C+4B | Z | ZP |
| 15XN1 | Master Project 1 | Z | 2 | 0P+2C+4B | Z | ZP |
| 16XN1 | Master Project 1 <i>Pemysl Toman</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 17XN1 | Master Project 1 <i>Václav Baroch, Michal Drábek, Alexandra Dvoáková, Veronika Faifrová, Eliška Glaserová, Rudolf F. Heid, Tomáš Horák, Vít Janoš, Milan Kíž,</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 18XN1 | Master Project 1 <i>Václav Rada, Nela Krásová</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 20XN1 | Master Project 1 <i>Jiří Růžka</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 21XN1 | Master Project 1 <i>Natalia Gusková, Andrej Lališ, Jakub Steiner, Slobodan Stojić, Peter Vittek, Terézia Pilmannová, Jakub Kraus, Vladimír Socha, Lenka Hanáková,</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 22XN1 | Master Project 1 <i>Michal Frydryn, Karel Kocián, Luboš Nouzovský, Zdeněk Svatý, Jakub Nováček</i> | Z | 2 | 0P+2C+4B | Z | ZP |
| 23XN1 | Master Project 1 | Z | 2 | 0P+2C+4B | Z | ZP |
| 11XN2 | Master Project 2 <i>Ivan Nagy</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 12XN2 | Master Project 2 <i>Zuzana Ľarská, Dagmar Koárková, Kristýna Neubergová, Martin Jacura, Jan Kruntorád, Ondrej Trešl, David Vodák, Tomáš Javoík, Pavel Purkart,</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 14XN2 | Master Project 2 <i>Vít Fábera, Tomáš Brandejský, Mária Jánešová, Jan Zelenka</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 15XN2 | Master Project 2 | Z | 2 | 0P+2C+8B | L | ZP |
| 16XN2 | Master Project 2 <i>Pemysl Toman, Josef Mík</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 17XN2 | Master Project 2 <i>Václav Baroch, Michal Drábek, Alexandra Dvoáková, Veronika Faifrová, Rudolf F. Heid, Tomáš Horák, Vít Janoš, Milan Kíž, Olga Mertlová,</i> Vít Janoš (Gar.) | Z | 2 | 0P+2C+8B | L | ZP |
| 18XN2 | Master Project 2 | Z | 2 | 0P+2C+8B | L | ZP |
| 20XN2 | Master Project 2 <i>Jiří Růžka, Patrik Horažovský</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 21XN2 | Master Project 2 <i>Natalia Gusková, Kateřina Grötschelová, Andrej Lališ, Jakub Steiner, Slobodan Stojić, Peter Vittek, Terézia Pilmannová, Jakub Kraus, Lenka Hanáková,</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 22XN2 | Master Project 2 <i>Michal Frydryn, Karel Kocián, Luboš Nouzovský, Zdeněk Svatý, Jakub Nováček</i> | Z | 2 | 0P+2C+8B | L | ZP |
| 23XN2 | Master Project 2 | Z | 2 | 0P+2C+8B | L | ZP |
| 11XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 12XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 14XN3L | Master Project 3 <i>Vít Fábera Vít Fábera (Gar.)</i> | Z | 2 | 0P+2C+8B | Z | ZP |
| 15XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 16XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 17XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 18XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 20XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 21XN3L | Master Project 3 <i>Natalia Gusková, Kateřina Grötschelová, Andrej Lališ, Slobodan Stojić, Peter Vittek, Terézia Pilmannová, Jakub Kraus, Vladimír Socha, Lenka Hanáková,</i> | Z | 2 | 0P+2C+8B | Z | ZP |
| 22XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 23XN3L | Master Project 3 | Z | 2 | 0P+2C+8B | Z | ZP |
| 11XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 12XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 14XN4L | Master Project 4 <i>Vít Fábera, Tomáš Brandejský, Mária Jánešová, Jan Zelenka</i> | Z | 2 | 0P+5C+8B | L | ZP |
| 15XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 16XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |

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|--------|---|---|---|----------|---|----|
| 17XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 18XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 20XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 21XN4L | Master Project 4 <i>Natalia Guskova, Kateřina Grötschelová, Andrej Lališ, Stanislav Pleninger, Jakub Steiner, Petr Had, Jiří Volt, Slobodan Stojić, Peter Vittek,</i> | Z | 2 | 0P+5C+8B | L | ZP |
| 22XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |
| 23XN4L | Master Project 4 | Z | 2 | 0P+5C+8B | L | ZP |

Characteristics of the courses of this group of Study Plan: Code=XN PL 1-4 22/23 Name=Projekty nav. 1.-4.sem (od) 22/23 programu PL (PRE i KOMBI)

| | | | |
|--------|------------------|---|---|
| 11XN1 | Master Project 1 | Z | 2 |
| 12XN1 | Master Project 1 | Z | 2 |
| 14XN1 | Master Project 1 | Z | 2 |
| 15XN1 | Master Project 1 | Z | 2 |
| 16XN1 | Master Project 1 | Z | 2 |
| 17XN1 | Master Project 1 | Z | 2 |
| 18XN1 | Master Project 1 | Z | 2 |
| 20XN1 | Master Project 1 | Z | 2 |
| 21XN1 | Master Project 1 | Z | 2 |
| 22XN1 | Master Project 1 | Z | 2 |
| 23XN1 | Master Project 1 | Z | 2 |
| 11XN2 | Master Project 2 | Z | 2 |
| 12XN2 | Master Project 2 | Z | 2 |
| 14XN2 | Master Project 2 | Z | 2 |
| 15XN2 | Master Project 2 | Z | 2 |
| 16XN2 | Master Project 2 | Z | 2 |
| 17XN2 | Master Project 2 | Z | 2 |
| 18XN2 | Master Project 2 | Z | 2 |
| 20XN2 | Master Project 2 | Z | 2 |
| 21XN2 | Master Project 2 | Z | 2 |
| 22XN2 | Master Project 2 | Z | 2 |
| 23XN2 | Master Project 2 | Z | 2 |
| 11XN3L | Master Project 3 | Z | 2 |
| 12XN3L | Master Project 3 | Z | 2 |
| 14XN3L | Master Project 3 | Z | 2 |
| 15XN3L | Master Project 3 | Z | 2 |
| 16XN3L | Master Project 3 | Z | 2 |
| 17XN3L | Master Project 3 | Z | 2 |
| 18XN3L | Master Project 3 | Z | 2 |
| 20XN3L | Master Project 3 | Z | 2 |
| 21XN3L | Master Project 3 | Z | 2 |
| 22XN3L | Master Project 3 | Z | 2 |
| 23XN3L | Master Project 3 | Z | 2 |
| 11XN4L | Master Project 4 | Z | 2 |
| 12XN4L | Master Project 4 | Z | 2 |
| 14XN4L | Master Project 4 | Z | 2 |
| 15XN4L | Master Project 4 | Z | 2 |
| 16XN4L | Master Project 4 | Z | 2 |
| 17XN4L | Master Project 4 | Z | 2 |
| 18XN4L | Master Project 4 | Z | 2 |
| 20XN4L | Master Project 4 | Z | 2 |
| 21XN4L | Master Project 4 | Z | 2 |
| 22XN4L | Master Project 4 | Z | 2 |
| 23XN4L | Master Project 4 | Z | 2 |

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 8

The role of the block: PV

Code of the group: Y2-NPPL 23/24

Name of the group: PVP nav.prez. program PL 23/24

Requirement credits in the group: In this group you have to gain 8 credits

Requirement courses in the group: In this group you have to complete 4 courses

Credits in the group: 8

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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|--------|--|------------|---------|----------|----------|------|
| 21Y2BS | Unmanned aircraft systems 2 <i>Tomáš Tluhoš, Michal Černý</i> | KZ | 2 | 2P+0C | L | PV |
| 21Y2CR | CRM | KZ | 2 | 2P+0C | L | PV |
| 21Y2FM | Aviation Company Financial Management <i>Radoslav Zozuňák Radoslav Zozuňák</i> | KZ | 2 | 2P+0C+8B | Z | PV |
| 21Y2LS | Air Traffic Services | KZ | 2 | 2P+0C+8B | L | PV |
| 21Y2MQ | Quality Management <i>Luboš Šocha</i> | KZ | 2 | 2P+0C+8B | L | PV |
| 21Y2MK | Marketing of Air Transport <i>Peter Vittek Peter Vittek</i> | KZ | 2 | 2P+0C+8B | Z | PV |
| 22Y2MN | Methods and Procedures of Aircraft Accident Investigation <i>Michal Frydřín, Karel Mündel Karel Mündel (Gar.)</i> | KZ | 2 | 2P+0C | L | PV |
| 21Y2MC | CNS Systems Modelling <i>Stanislav Pleninger Stanislav Pleninger</i> | KZ | 2 | 2P+0C+8B | Z | PV |
| 21Y2PP | Law and Operation in Air Transport <i>Radoslav Zozuňák</i> | KZ | 2 | 2P+0C+8B | L | PV |
| 21Y2UL | Aircraft Maintenance <i>Tomáš Páryzek</i> | KZ | 2 | 2P+0C+8B | L | PV |
| 14Y2UI | Artificial Intelligence | KZ | 2 | 2P+0C+8B | Z,L | PV |
| 15Y2ZA | Basic Principles of English Academic Writing and Abstract in English | KZ | 2 | 2P+0C | Z | PV |

Characteristics of the courses of this group of Study Plan: Code=Y2-NPPL 23/24 Name=PVP nav.prez. program PL 23/24

| | | | |
|--|--|----|---|
| 21Y2BS | Unmanned aircraft systems 2 | KZ | 2 |
| Modern trends in unmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights beyond the applicable legislation. | | | |
| 21Y2CR | CRM | KZ | 2 |
| Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human body. Fatigue Sleep & Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Team Behaviour. Automation. | | | |
| 21Y2FM | Aviation Company Financial Management | KZ | 2 |
| Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources, depreciation, retained earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content. | | | |
| 21Y2LS | Air Traffic Services | KZ | 2 |
| Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP a ACC control. History of ATS at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS. | | | |
| 21Y2MQ | Quality Management | KZ | 2 |
| History, basic definition. Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality management system. Environmental management systems. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality management systems. Comprehensive quality management, excellence models and corporate social responsibility. Quality audits. | | | |
| 21Y2MK | Marketing of Air Transport | KZ | 2 |
| The content of the course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for analysis, strategy development and implementation of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present systems of market, competition and product analysis, creation of marketing strategies and planning. | | | |
| 22Y2MN | Methods and Procedures of Aircraft Accident Investigation | KZ | 2 |
| Expanding knowledge of practical procedures in aircraft accident investigation. Equipment and organisation of the investigation team. Examples of aircraft accident investigations in the Czech Republic and abroad and analysis of published final reports. Examples of the preparation of the final report of an air accident investigation. | | | |
| 21Y2MC | CNS Systems Modelling | KZ | 2 |
| The course is designed as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathematical approaches and software tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking. | | | |
| 21Y2PP | Law and Operation in Air Transport | KZ | 2 |
| Development of aviation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations. EU legislation and civil aviation. Execution of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Responsibilities of air carriers for passengers, luggage and cargo. The safe transport of dangerous goods. | | | |
| 21Y2UL | Aircraft Maintenance | KZ | 2 |
| Approved Maintenance Organisations (AMOs), Continuing Airworthiness Management Organisations (CAMOs), Maintenance Training Organisations (MTOs), technical documentation and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, maintenance programmes and scheduling, modifications and general repair methods, aircraft centre of gravity and weights, human factors in aircraft maintenance. | | | |
| 14Y2UI | Artificial Intelligence | KZ | 2 |
| History of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learning. | | | |
| 15Y2ZA | Basic Principles of English Academic Writing and Abstract in English | KZ | 2 |
| Theory, creating a phrasal bank according to students' specialisations, rhetorical analysis of texts/abstracts, drafting an abstract, providing effective feedback. | | | |

List of courses of this pass:

| Code | Name of the course | Completion | Credits |
|--|--|------------|---------|
| 11APAS | Applied Statistics | Z,ZK | 4 |
| Descriptive statistics, data preprocessing, discretize continuous data. Hypothesis testing - continuous and discrete variables. Regression and correlation analysis. Multivariable methods - multiple regression analysis, logistic regression analysis, ROC curve, MANOVA, PCA, Factor analysis. Power analysis, preparation, processing and evaluation of the experiment. | | | |
| 11MMJ | Mathematical Models and their Applications | Z,ZK | 4 |
| System. Regression, discrete and logistic models. Bayesian estimation of model parameters. Parameter estimation of normal regression, discrete and logistic models. Classification with logistic model. One-step and multi-step prediction with regression and discrete models. State model. State estimation. Kalman filter. Control with regression and discrete models. | | | |
| 11XN1 | Master Project 1 | Z | 2 |
| 11XN2 | Master Project 2 | Z | 2 |
| 11XN3L | Master Project 3 | Z | 2 |
| 11XN4L | Master Project 4 | Z | 2 |
| 12XN1 | Master Project 1 | Z | 2 |
| 12XN2 | Master Project 2 | Z | 2 |
| 12XN3L | Master Project 3 | Z | 2 |
| 12XN4L | Master Project 4 | Z | 2 |
| 14XN1 | Master Project 1 | Z | 2 |
| 14XN2 | Master Project 2 | Z | 2 |
| 14XN3L | Master Project 3 | Z | 2 |
| 14XN4L | Master Project 4 | Z | 2 |
| 14Y2UI | Artificial Intelligence | KZ | 2 |
| History of artificial intelligence, knowledge, its representation including frames, state space search, constraints, genetic algorithms, machine learning. | | | |
| 15J2A1 | Language - English 1 | Z | 2 |
| Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. | | | |
| 15JBA2 | Language - English 2 | Z | 2 |
| Presentation Skills - expert technical discourse and style; Analysis of expert texts and their production; Preparation for overseas work engagement. | | | |
| 15XN1 | Master Project 1 | Z | 2 |
| 15XN2 | Master Project 2 | Z | 2 |
| 15XN3L | Master Project 3 | Z | 2 |
| 15XN4L | Master Project 4 | Z | 2 |
| 15Y2ZA | Basic Principles of English Academic Writing and Abstract in English | KZ | 2 |
| Theory, creating a phrasal bank according to students' specialisations, rhetorical analysis of texts/abstracts, drafting an abstract, providing effective feedback. | | | |
| 16XN1 | Master Project 1 | Z | 2 |
| 16XN2 | Master Project 2 | Z | 2 |
| 16XN3L | Master Project 3 | Z | 2 |
| 16XN4L | Master Project 4 | Z | 2 |
| 17XN1 | Master Project 1 | Z | 2 |
| 17XN2 | Master Project 2 | Z | 2 |
| 17XN3L | Master Project 3 | Z | 2 |
| 17XN4L | Master Project 4 | Z | 2 |
| 18XN1 | Master Project 1 | Z | 2 |
| 18XN2 | Master Project 2 | Z | 2 |
| 18XN3L | Master Project 3 | Z | 2 |
| 18XN4L | Master Project 4 | Z | 2 |
| 20XN1 | Master Project 1 | Z | 2 |
| 20XN2 | Master Project 2 | Z | 2 |
| 20XN3L | Master Project 3 | Z | 2 |
| 20XN4L | Master Project 4 | Z | 2 |
| 21AFM | Air Traffic Management | Z,ZK | 5 |
| Current ATM system and its functional blocks. View of ATM data (technical architecture and configuration, transmission systems and networks). Data exchange with neighboring ATM systems. Monitoring systems and technical supervision. ATM simulation. ATM conceptions and strategies for next years. EUROCONTROL - CFMU. FAB. ATS's - AOC's data applications. | | | |
| 21BILD | Safety Engineering in Aviation | Z,ZK | 4 |
| The course is focused on understanding the issue of safety, learning how to assess new systems in terms of safety and acquiring principles of safety management. Students will learn explaining accidents and incident causes and bridge their theoretical knowledge with practical problems of air transport. | | | |
| 21CNSS | CNS Systems | Z,ZK | 5 |
| Course provides full technical informations about CNS (communication, navigation, surveillance) systems used in aviation. Systems are presented in perspective of future development. | | | |
| 21LETS | Airport | Z,ZK | 4 |
| Methods of designing new airports and developing existing ones. Connection of the airport to the surrounding infrastructure. Airport economics. Detailed look at the development of movement areas. Certification of airside movement areas and procedures according to EASA CS-ADR-DSN. Development planning - design, preparation and regulatory basis. Environmental aspects of airport operations. | | | |

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| 21MULD | Managerial Challenges in Air Transport | Z,ZK | 5 |
| The course contains a list of basic managerial tasks in aviation. The basic managerial tasks are quality assurance and operational safety, marketing operations, marketing context implementation, airline network management, fleet management and revenue management. The core disciplines also include project management, cost management and project resource planning and management. | | | |
| 21PAM1 | Programming and Modelling 1 | KZ | 5 |
| Harmonic signals, their generation. Real signals, sampling theorem, aliasing. Signal filtering. Fourier transform (FT), discrete Fourier transform (DFT), fast Fourier transform (FFT). Spectrum estimation, spectral power density. Image - basic processing methods, 2D Fourier transform, noise filtering, edge detection, linear and non-linear methods, brightness transforms, geometric transforms, image compression. | | | |
| 21PEKL | Principles and Models in Air Transport Economics | Z,ZK | 5 |
| The course contains the most important and typical models on which the economics of air transport is based. It covers the principles of regulation, airline infrastructure models, market structure, analyses airline costs, and looks in detail at the low-cost and charter airline model. It also focuses on airline alliances, air cargo, airline strategies and the economic principles of safety and security. | | | |
| 21PLET | Airport Operations | Z,ZK | 5 |
| Planning, design and modelling of airport processes in airside, landside and terminal buildings. Impact of infrastructure and equipment on airport capacity. Available tools and practices for increasing capacity. Operational analytics, capacity and traffic load forecasting. Purpose and development of an airport masterplan. | | | |
| 21SPOL | Aircraft Technology Reliability | Z,ZK | 4 |
| Subject deals with tuition of separate attributes of reliability (no failure, vitality, maintainability, and so on) and main criterions of safety of production and working of aerospace engineering. General legalities are in the framework of tuition demonstrated on the example of calculation of reliability of integral characteristics of materials and they are practical illustration of its security in The Czech Police Aviation Department. | | | |
| 21XN1 | Master Project 1 | Z | 2 |
| 21XN2 | Master Project 2 | Z | 2 |
| 21XN3L | Master Project 3 | Z | 2 |
| 21XN4L | Master Project 4 | Z | 2 |
| 21Y2BS | Unmanned aircraft systems 2 | KZ | 2 |
| Modern trends in unmanned aircraft development. Use of unmanned aircraft. Managerial activities related to the operation of unmanned aircraft. Flights beyond the applicable legislation. | | | |
| 21Y2CR | CRM | KZ | 2 |
| Introduction to CRM. Analysis of air accidents. Human factor. Error. Historical development of CRM. Health and fitness. Stress and its effect on the human body. Fatigue Sleep & Vigilance. Information Processing. Situational Awareness. Workload Management. Decision Making. Communication. Leadership & Team Behaviour. Automation. | | | |
| 21Y2FM | Aviation Company Financial Management | KZ | 2 |
| Theories of corporate finance - financial statements, budget, forecast. Financial policy of the company. Financial resources - long-term financial resources, depreciation, retained earnings, shares, bonds, loans, leasing, capital. Financial and economic analysis of the company - structure and content. | | | |
| 21Y2LS | Air Traffic Services | KZ | 2 |
| Airspace structure in Czech Republic and other countries. Introduction and description of ATS units in Czech Republic. Practical examples of TWR, APP a ACC control. History of ATS at USA and Czechoslovakia. ATS - Model of financing. Training Systém of Air Traffic Controllers. Future development of ATS. | | | |
| 21Y2MC | CNS Systems Modelling | KZ | 2 |
| The course is designed as a set of model tasks in the field of communication navigation and surveillance systems in aviation, addressed using mathematical approaches and software tools. A large part is devoted to air targets tracking, measurement-to-track association, track filtering and multisensor tracking. | | | |
| 21Y2MK | Marketing of Air Transport | KZ | 2 |
| The content of the course "Marketing in air transport" is the management of activities and processes using available marketing tools and processes for analysis, strategy development and implementation of sales of goods and services in the aviation industry. In addition to the theoretical foundations of marketing, the lectures present systems of market, competition and product analysis, creation of marketing strategies and planning. | | | |
| 21Y2MQ | Quality Management | KZ | 2 |
| History, basic definition. Pioneers in the field of quality. International quality organisations and quality promotion in the Czech Republic. Quality management system. Environmental management systems. Integrated management systems. Risk management in the context of the requirements of ISO standards. Sectoral quality management systems. Comprehensive quality management, excellence models and corporate social responsibility. Quality audits. | | | |
| 21Y2PP | Law and Operation in Air Transport | KZ | 2 |
| Development of aviation law. International conventions on civil aviation. International organisations and including of the Czech Republic in these organisations. EU legislation and civil aviation. Execution of state administration and state supervision in matters of civil aviation, in accordance with Act No. 49/1997 Col. Facilitation. Responsibilities of air carriers for passengers, luggage and cargo. The safe transport of dangerous goods. | | | |
| 21Y2UL | Aircraft Maintenance | KZ | 2 |
| Approved Maintenance Organisations (AMOs), Continuing Airworthiness Management Organisations (CAMOs), Maintenance Training Organisations (MTOs), technical documentation and additional ICA (Instructions for Continued Airworthiness) instructions, aircraft release to service procedure, maintenance programmes and scheduling, modifications and general repair methods, aircraft centre of gravity and weights, human factors in aircraft maintenance. | | | |
| 22XN1 | Master Project 1 | Z | 2 |
| 22XN2 | Master Project 2 | Z | 2 |
| 22XN3L | Master Project 3 | Z | 2 |
| 22XN4L | Master Project 4 | Z | 2 |
| 22Y2MN | Methods and Procedures of Aircraft Accident Investigation | KZ | 2 |
| Expanding knowledge of practical procedures in aircraft accident investigation. Equipment and organisation of the investigation team. Examples of aircraft accident investigations in the Czech Republic and abroad and analysis of published final reports. Examples of the preparation of the final report of an air accident investigation. | | | |
| 23XN1 | Master Project 1 | Z | 2 |
| 23XN2 | Master Project 2 | Z | 2 |
| 23XN3L | Master Project 3 | Z | 2 |
| 23XN4L | Master Project 4 | Z | 2 |

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