Study plan

Name of study plan: Bachelor TUL Full-Time from 2024/25

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Technology of Aviation Maintenance

Type of study: Bachelor full-time

Required credits: 180 Elective courses credits: 0 Sum of credits in the plan: 180

Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 57

The role of the block: Z

Code of the group: 5S-BP-TUL-26/27

Name of the group: 5th Sem. Bachelor Full-Time TUL from 2026/27

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 8 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
21KSY1	Aircraft Construction and Systems 1 Kate ina Stuchliková, Karel Mündel Karel Mündel	Z,ZK	7	4P+3C	Z	Z
21RATE	Radiotechnology Vladimír Machula Vladimír Machula	ZK	2	2P+0C	Z	Z
21LES2	Aviation Legislation 2	KZ	2	2P+0C	Z	Z
21PYD2	Aircraft Maintenance Technology 2 Martin Novák Martin Novák	KZ	4	3P+1C	Z	Z
21TUR1	Turbine Engines 1 Stanislav Kušmírek (Gar.)	Z,ZK	7	3P+3C	Z	Z
21KTVL	Aircraft Structures and Production Technology Jakub Kraus Jakub Kraus (Gar.)	Z	3	0P+2C	Z	Z
21LAU1	Aviation English 1 for Technology of Maintenance Jitka He manová Jitka He manová	Z	2	0P+2C	Z	Z
21SBU2	Bachelor Thesis Seminar 2 Lenka Hanáková, Vladimír Socha Vladimír Socha	Z	1	1P+0C	Z	Z

21KSY1	Aircraft Construction and Systems 1	Z,ZK	7
Aircraft construction	equirements and functions - fuselage, wings, flight controls, undercarriage, aircraft pylon, nacelle. Aircraft systems requiremen	its and functions - d	rainage, water
distribution systems	and aircraft ligthing.		
21RATE	Radiotechnology	ZK	2
EM field, radio waves	, propagation, radio spectrum, information transmission, signal processing, modulations, signal coding, radio transceivers, ant	ennas, and applicat	ion of radio
systems in aviation.			
21LES2	Aviation Legislation 2	KZ	2
Commission regulati	on (EU) 1321/2014, Part 66, Part 145, Part 147, Part CAMO, Part CAO, Commission regulation (EU) 965/2012		
	on (EU) 1321/2014, Part 66, Part 145, Part 147, Part CAMO, Part CAO, Commission regulation (EU) 965/2012 Aircraft Maintenance Technology 2	KZ	4
21PYD2		1 1	4 material fatigue
21PYD2 The second part of the	Aircraft Maintenance Technology 2	so on the issues of	_
21PYD2 The second part of the and corrosion. Stude	Aircraft Maintenance Technology 2 e course introduces all currently used inspection methods, including non-destructive ones, that are used in aviation. Focus is al	so on the issues of	_
21PYD2 The second part of the and corrosion. Stude	Aircraft Maintenance Technology 2 e course introduces all currently used inspection methods, including non-destructive ones, that are used in aviation. Focus is all this are also introduced to aircraft handling methods and the effect of the environment on the operation of the aircraft. Methods of	so on the issues of	_

Aircraft Structures and Production Technology 21KTVL Practical knowledge of the construction and technology of aircraft production, within which excursions to production and maintenance organizations will be carried out. The individual parts will focus on the production technologies of aircraft, aircraft components, engines and propellers from traditional (metal) and modern (composite) materials. 21LAU1 2 Aviation English 1 for Technology of Maintenance Lectures include various types of the language exercises and are focused on the following topics - aicraft construction components, aicraft systems and principles, maintenance technology, maintenance organizations, maintenance tools and equipment, material science Bachelor Thesis Seminar 2 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.

Code of the group: 6S-BP-TUL-26/27

Name of the group: 6th Sem. Bachelor Full-Time TUL from 2026/27

Requirement credits in the group: In this group you have to gain 29 credits

Requirement courses in the group: In this group you have to complete 7 courses

Credits in the group: 29 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11MSP	Modeling of Systems and Processes Bohumil Ková	Z,ZK	4	2P+2C+12B	L L	Z
21AVIA	Avionics	Z,ZK	3	2P+2C	L	Z
21KSE2	Aircraft Construction and Systems 2 Karel Mündel	Z,ZK	7	4P+2C	L	Z
21TUR2	Turbine Engines 2 Stanislav Kušmírek (Gar.)	Z,ZK	7	3P+2C	L	Z
21PYD3	Aircraft Maintenance Technology 3	KZ	5	3P+1C	L	Z
21LAU2	Aviation English 2 for Technology of Maintenance Jitka He manová	Z	2	0P+2C	L	Z
21SBU3	Bachelor Thesis Seminar 3 Lenka Hanáková	Z	1	1P+0C	L	Z

Characteristics of the courses of this group of Study Plan: Code=6S-BP-TUL-26/27 Name=6th Sem. Bachelor Full-Time TUL from 2026/27

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 dif	ferential and differ	ential equations.
Linear and nonlinear sys	stem, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer functio	n. Stability of LTI:	systems.
Discretization of continu	ous systems. System interconnection.		

21AVIA Z.ZK **Avionics** Aircraft instrumentation, electromagnetic compatibility, aircraft pilot-navigation instrumentation, central electronic aircraft monitoring system, electronic flight instrument system, integrated

modular avionics, flight control and optimization system, on-board and information systems. Aircraft Construction and Systems 2 Z,ZK

Aircraft systems requirements and functions - air condition, pressurization, oxygen systems, tyres, hydraulics, fuel systems, electrical systems, deicing system, fire protection system.

21TUR2 Z.ZK Turbine Engines 2 Second part of the course is focused on the explanation and description of the purpose, operation and construction characteristics of following aircraft turbine engines utility systems

- lubrication system, cooling and internal air systems, fuel systems, starting and ignition, controls and instrumentation. Purpose, operation principles and construction schemes of turboprop engines, turboshaft and auxiliary power units.

21PYD3 Aircraft Maintenance Technology 3 5

Course provides students with a detailed overview of organisations involved in heavy aircraft maintenance, maintenance planning and also technical documentation. Last but not least, this course introduces how to deal with various aircraft system failures as well as various structural damage and aircraft modifications. Students are also introduced to the self management system and storage procedures in heavy aircraft maintenance.

21LAU2 Aviation English 2 for Technology of Maintenance

Lectures include various types of the language exercises and are focused on the following topics - aicraft systems and principles, maintenance technology, maintenance organizations maintenance tools and equipment, material science and manterials application, ecology.

Bachelor Thesis Seminar 3 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.

Name of the block: Semestrální projekt Minimal number of credits of the block: 4

The role of the block: ZP

Code of the group: X1-BP-TUL-23/24

Name of the group: Research Groups Bachelor Full-Time TUL from 2023/24 Requirement credits in the group: In this group you have to gain 4 credits

Requirement courses in the group: In this group you have to complete 3 courses

Credits in the group: 4

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
12X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
14X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
15X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
16X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
17X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
18X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
20X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
21X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
22X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
23X31U	Project 1 TUL	Z	1	0P+1C	L	ZP
11X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
12X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
14X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
15X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
16X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
17X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
18X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
20X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
21X32U	Project 2 TUL Jakub Kraus, Natalia Guskova, Terézia Pilmannová, Daniel Urban, Andrej Lališ	Z	2	0P+3C	Z	ZP
22X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
23X32U	Project 2 TUL	Z	2	0P+3C	Z	ZP
11X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
12X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
14X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
15X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
16X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
17X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
18X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
20X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
21X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
22X33U	Project 3 TUL	Z	1	0P+2C	L	ZP
23X33U	Project 3 TUL	Z	1	0P+2C	L	ZP

Characteristics of the courses of this group of Study Plan: Code=X1-BP-TUL-23/24 Name=Research Groups Bachelor Full-Time TUL from 2023/24

110111 2023/24			
11X31U	Project 1 TUL	Z	1
12X31U	Project 1 TUL	Z	1
14X31U	Project 1 TUL	Z	1
15X31U	Project 1 TUL	Z	1
16X31U	Project 1 TUL	Z	1
17X31U	Project 1 TUL	Z	1
18X31U	Project 1 TUL	Z	1
20X31U	Project 1 TUL	Z	1
21X31U	Project 1 TUL	Z	1
22X31U	Project 1 TUL	Z	1
23X31U	Project 1 TUL	Z	1
11X32U	Project 2 TUL	Z	2
12X32U	Project 2 TUL	Z	2
14X32U	Project 2 TUL	Z	2
15X32U	Project 2 TUL	Z	2
16X32U	Project 2 TUL	Z	2

17X32U	Project 2 TUL	Z	2
18X32U	Project 2 TUL	Z	2
20X32U	Project 2 TUL	Z	2
21X32U	Project 2 TUL	Z	2
22X32U	Project 2 TUL	Z	2
23X32U	Project 2 TUL	Z	2
11X33U	Project 3 TUL	Z	1
12X33U	Project 3 TUL	Z	1
14X33U	Project 3 TUL	Z	1
15X33U	Project 3 TUL	Z	1
16X33U	Project 3 TUL	Z	1
17X33U	Project 3 TUL	Z	1
18X33U	Project 3 TUL	Z	1
20X33U	Project 3 TUL	Z	1
21X33U	Project 3 TUL	Z	1
22X33U	Project 3 TUL	Z	1
23X33U	Project 3 TUL	Z	1

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 119

The role of the block: P

Code of the group: 1S-BP-TUL-22/23

Name of the group: 1st Sem. Bachelor Full-Time TUL from 2022/23

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 8 courses

Credits in the group: 30 Note on the group.

Note on the grou	μ.					
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 Tomáš Tasák, Olga Vraštilová, Magdalena Hykšová, Bohumil Ková, Ond ej Navrátil Bohumil Ková Ond ej Navrátil (Gar.)	Z,ZK	7	2P+4C+22B	Z	Р
11LA	Linear Algebra Magdalena Hykšová, Lucie Kárná, Pavel Provinský, Martina Be vá ová Magdalena Hykšová Martina Be vá ová (Gar.)	Z,ZK	3	2P+1C+10B	Z	Р
14ZEL1	Electronics Basics 1 Tomáš Musil, Vít Fábera Vít Fábera (Gar.)	Z,ZK	5	3P+2C	Z	Р
18MTY	Materials Science and Engineering Tomáš Doktor, Jaromír Kylar, Veronika Drechslerová, Nela Kr má ová, Jitka ezní ková, Jaroslav Valach, Vít Malinovský, Jaromír Kylar Jaroslav Valach Tomáš Doktor (Gar.)	Z,ZK	3	2P+1C+10B	Z	Р
11GIE	Geometry Pavel Provinský, Old ich Hykš, Šárka Vorá ová Old ich Hykš Old ich Hykš (Gar.)	KZ	3	2P+2C+12B	Z	Р
14ASD	Algorithm and Data Structures Vít Fábera, Tomáš Brandejský, Michal Je ábek, Alena Kubá ová, Jan Procházka, Martin Fiala, Lukáš Svoboda, Tereza Panská Vít Fábera Vít Fábera (Gar.)	KZ	3	0P+2C+8B	Z	Р
14KSP	Constructing with Computer Aid Lukáš Svoboda	KZ	2	0P+2C+8B	Z	Р
21ZLKS	Basics of Aircraft Structures and Systems Jakub Kraus, Pavol Hajla Jakub Kraus	KZ	4	2P+2C	Z	Р

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

11CAL1	Calculus 1	Z,ZK	7
Sequence of real numb	ers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton in	itegral, Riemann i	ntegral, improper
Riemann integral. First-	order differential equations, linear differential equations.		
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. 14ZEL1 Electronics Basics 1 Z,ZK

Electrotechnic terms, electron theory, static electricity, electrical conductivity and terminology, electrical resistance, resistor, capacity and capacitor, inductance and inductor, powers, DC circuits - simplicity method, superposition, node-voltage method, mesh - circuit method, AC current, characteristics of AC waveforms, 3-phase el. power, AC circuits - Steinmetz's symbolic method, power, filters.

18MTY Materials Science and Engineering	Z,ZK	3
Basic course of materials science and engineering explains mechanical properties of structural materials base	ed on their bonding forces and microstructure. However t	he main attention
is paid to metals as the most important engineering materials, also other major classes of materials are presented as the most important engineering materials, also other major classes of materials are presented as the most important engineering materials, also other major classes of materials are presented as the most important engineering materials, also other major classes of materials are presented as the most important engineering materials, also other major classes of materials are presented as the most important engineering materials.	ented, namely ceramics, polymers and composites. Atte	ntion is also paid
to degradation processes in materials, to defectoscopy and to main mechanical tests.		
11GIE Geometry	KZ	3
Differential geometry of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihed	ron. Kinematics - a curve as a trajectory of the motion, t	he velocity, and
acceleration of a particle moving on a curved path.		
14ASD Algorithm and Data Structures	KZ	3
Students will analyze problems, design a theoretical solution to a given problem and write the resulting algorithm	nm using flowcharts, practice reading algorithms written	using flowcharts,
and use basic Boolean algebra to construct constraints in algorithms. Students will be introduced to the basic	s of the Python programming language - variable, branc	hing, loops, they
will learn to work with variables of basic data types (integer, floating point and string) and the list data structure	e in their programs.	
14KSP Constructing with Computer Aid	KZ	2
"CAD systems" term determination. CAD role in projecting system model. Existing CAD systems on Czech m	arket. Project creation, basic common work rules in gran	hic applications
and CA systems. Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modific	ations, user interfaces, projecting possibilites, AutoCAD	environment
profiles, drawings with raster foundaments).		
21ZLKS Basics of Aircraft Structures and Systems	KZ	4
Basics of screening, technical drawing, technological and operational signs. Hydraulic, pneumatic, fuel, electr	icity and block diagrams in aviation.	'

Code of the group: 2S-BP-TUL-23/24

Name of the group: 2nd Sem. Bachelor Full-Time TUL from 2023/24

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 30

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11CAL2	Calculus 2 Magdalena Hykšová	Z,ZK	5	2P+3C+20E	L L	Р
11STAT	Statistics	Z,ZK	4	2P+2C+12E	3 L	Р
14ZEL2	Electronics Basics 2 Vít Fábera	Z,ZK	4	2P+2C	L	Р
18SAT	Structural Analysis	Z,ZK	4	2P+2C+14E	B L	Р
21LGI1	Aviation Legislation 1 Ji í uk	Z	2	3P+0C	L	Р
21ZKL1	Principles of Flight 1 Vladimír Socha (Gar.)	ZK	3	2P+1C	L	Р
14PRG	Programming	KZ	2	0P+2C+8E	B L	Р
16LLA1	Aircraft 1	KZ	3	2P+1C	L	Р
21LRY1	Aircraft Engines 1 Jakub Kraus (Gar.)	KZ	3	2P+1C	L	Р

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

2023/24			
11CAL2	Calculus 2	Z,ZK	5
Linear differential ed	uations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and surface in	ntegrals.	
11STAT	Statistics	Z,ZK	4
Basics of probability	Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parai	metric tests Nonpara	ametric tests
Regression and cor	elation analysis		
14ZEL2	Electronics Basics 2	Z,ZK	4
Production of electri AC generators.	city and the DC power sources, magnetism, DC motors and generators, AC motors (synchronous, asynchronous, 1-phase, 3-pha	se), stepper motors,	, BLDC motors
18SAT	Structural Analysis	Z,ZK	4
General system of fi	pres in plane and space. Calculation of reactions of bodies and structures. Assessment of internal forces on statically determin	ate beams and simp	ple girders.
Principle of virtual w	ork. Kinematic method for calculation of reactions of statically determinate systems. Determination of axial forces in truss constructi	ons. Cross-sectional	l characteristic
of planar shapes. Fi	per polygons and chains.		
21LGI1	Aviation Legislation 1	Z	2
	on legislation. Sphere of action of the CAA, ICAO, EASA. Part M and ML (continuing airworthiness), maintenance programmes ess), design and production of aircraft.	, ADs, airworthiness	reviews. Part
21ZKL1	Principles of Flight 1	ZK	3
Aerodynamic drag,	elation between drag and speed, streamline, boundary layer, formula of continuity, formula of Bernoulli, lift and drag, air flow ar	d pressures around	wing, angle o
attack, reactions of	ving 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, ind	uced drag, interferer	nce, devices fo
lift and drag increas	э.		
14PRG	Programming	KZ	2
	aming builds as and fully sytemate the source 14ACD (Algorithmization and Data Ctrustures). The knowledge of the Duther was	rommina longuago i	
The Course Program	nming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python prog	ranınıng language i	is expanded
•	irring builds on and fully exterios the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python progression and structures is and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and s		•

16LLA1 Aircraft 1
Aircraft structural and conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and categorisation. Aircraft loadings.

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.

Code of the group: 3S-BP-TUL-25/26

Name of the group: 3rd Sem. Bachelor Full-Time TUL from 2025/26

Requirement credits in the group: In this group you have to gain 30 credits

Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 30 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
11FYZ	Physics Old ich Hykš, Pavel Demo, Zuzana Malá, Tomáš Vít , Jana Kuklová Jana Kuklová Pavel Demo (Gar.)	Z,ZK	5	2P+2C+18B	Z	Р
16LLA2	Aircraft 2 Karel Mündel, Daniel Urban, Jan Slezá ek, Karel Hylmar	Z,ZK	2	2P+1C	Z	Р
18PZP	Elasticity and Strength Tomáš Doktor, Jitka ezní ková, Josef Jíra, Jan Šleichrt, Jan Vy ichl, Daniel Kytý, Ond ej Jiroušek Ond ej Jiroušek Ond ej Jiroušek (Gar.)	Z,ZK	3	2P+1C+10B	Z	Р
21LCUL	Aviation Maintenance Human Factors Oliver Dzvoník Oliver Dzvoník Oliver Dzvoník (Gar.)	Z,ZK	5	2P+2C	Z	Р
21LRY2	Aircraft Engines 2 Daniel Hanus, Tomáš Parýzek Daniel Hanus Stanislav Kušmírek (Gar.)	Z,ZK	3	2P+1C	Z	Р
21PUP1	Instrumentation 1 Pavel Hovorka	ZK	3	2P+0C	Z	Р
14ZLEN	Basics of Electronics Tomáš Musil, Vít Fábera Vít Fábera Vít Fábera (Gar.)	KZ	3	2P+1C	Z	Р
21UPUL	Introduction to Aircraft Maintenance Technology Kate ina Stuchlíková, Jakub Charezinski Kate ina Stuchlíková	Z	3	3P+0C	Z	Р
15JZ1A	Foreign Language - English 1 Jitka He manová, Markéta Vojanová, Dana Boušová, Marie Michlová, Marek Tome ek, Jan Feit, Markéta Musilová, Peter Morpuss, Eva Rezlerová Lenka Monková (Gar.)	Z	3	0P+4C+10B	Z	Р

Characteristics of the courses of this group of Study Plan: Code=3S-BP-TUL-25/26 Name=3rd Sem. Bachelor Full-Time TUL from

2025/26		
11FYZ Physics	Z,ZK	5
Kinematics, dynamics, Newton's laws, force fields, mechanics of continuum, thermodynamics, introduction to electrostatics and electric current	nt.	
16LLA2 Aircraft 2	Z,ZK	2
Manufacturers responsibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and na	tional standards. Static	solidity of aircraft
structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presumption.		
18PZP Elasticity and Strength	Z,ZK	3
Tension and compression. Bending of beam. Shear stress in bending of beam. Design and analysis of cross section of beam. Design of riveted	d, bolted and welded joi	nts of structures.
Analysis of deflection curve of beams. Torsion of circular cross sections. Combined loading. Stability.		
21LCUL Aviation Maintenance Human Factors	Z,ZK	5
Human factor, basic models of human factor, human performance and limitations, factors influencing performance, social psychology, communications, factors in the properties of th	nication, human errors.	
21LRY2 Aircraft Engines 2	Z,ZK	3
Compressors, centrifugal compressor, combustion chamber, turboshaft engines, ramjets, power, thermal efficiency and fuel consumption, star	rting aircraft turbine eng	ines, idling and
idling speed.		
21PUP1 Instrumentation 1	ZK	3
Basic construction principles of instrumentation, electronic displays, basics of measurement - sensitivity and errors, engine instrumentation (p	ressure gauges, thermo	meters, fuel
quantity and fuel flow measurement, torque and EPR measurement), indication in other aircraft systems (position, fire and icing indication, vib	ration monitoring, press	urisation system
monitoring, aerometric instruments (sensors, altimeter, air speed indicator, VSI, ADC).		
14ZLEN Basics of Electronics	KZ	3
Semiconductors, PN junction, diodes, rectifiers, SCR, diac, triac, Zener diode, Schottky diode, photodiode, bipolar junction transistor, transistor	or circuits, unipolar junct	ion tranzistors
and circuits, technology of integrated circuits, feedback theory, operational amplifiers, printed circuit boards, servo-systems, oscillators, switch	ing power suplies.	
21UPUL Introduction to Aircraft Maintenance Technology	Z	3
Students are given an overview of safe work practices as well as an insight into the history of aircraft maintenance. In addition, tools used in he	eavy aircraft maintenanc	e are introduced
as well as basic care procedures. A significant portion of the course is devoted to technical drawings as well as the Electrical Wiring Inspection	n System (EWIS).	
15JZ1A Foreign Language - English 1	Z	3
Grammatical Structures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptions	ive and communicative s	kills. Elementary

Code of the group: 4S-BP-TUL-25/26

Name of the group: 4th Sem. Bachelor Full-Time TUL from 2025/26

stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

Requirement credits in the group: In this group you have to gain 29 credits Requirement courses in the group: In this group you have to complete 9 courses

Credits in the group: 29

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
11ELMO	Electromagnetic Field and Optics Zuzana Malá	Z,ZK	5	2P+2C	L	Р
21PRJ2	Instrumentation 2 Pavel Hovorka Jakub Hospodka (Gar.)	ZK	3	2P+0C	L,Z	Р
21V	Aircraft Propellers Martin Novák	Z,ZK	6	3P+2C	L	Р
21ZT	ATM Systems	ZK	2	2P+0C	Z,L	Р
14ENIK	Electronics Vít Fábera	KZ	4	2P+2C	L	Р
18POMY	Advanced Materials Petr Koudelka (Gar.)	KZ	2	2P+0C	L	Р
21PYD1	Aircraft Maintenance Technology 1	KZ	3	3P+1C	L	Р
21SBU1	Bachelor Thesis Seminar 1 Lenka Hanáková	Z	1	1P+0C	L	Р
15JZ2A	Foreign Language - English 2 Marek Tome ek (Gar.)	Z,ZK	3	0P+4C+10E	B L	Р

11ELMO	Electromagnetic Field and Optics	Z,ZK	5
Electric field. Electr	ic current. Magnetic field. Electromagnetic field. Optics. Basics of solid-state physics.	'	'
21PRJ2	Instrumentation 2	ZK	3
Compass, gyroscop	oic instruments (turn indicator, attitude indicator, directional gyro), inertial instruments, recording and monitoring systems, war	ning systems (TCAS,	, GPWS), AFC
autopilot, flight dire	ector, autothrust), FMS, flight envelope protection, communication systems, flight computers.		
21V	Aircraft Propellers	Z,ZK	6
heory of propeller	blade, propeller load, propeller construction, control of blade angle, de-icing system, maintenance and repair of propellers.	,	
21ZT	ATM Systems	ZK	2
he course introduc	ces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical prir	nciples and solutions	as far as
ommunication, nav	rigation and surveillance aviation systems are concerned.		
4ENIK	Electronics	KZ	4
nalog and digital r	epresentation, radix systems, combinational logical circuits, Karnaugh maps, logical circuits realization, sequential logical circ	cuits, integrated circui	its SSI - VLSI
	ounters, A/D and D/A convertors, programmable circuits (FPGA, SoC), computer terminology, computer architecture, single-ch	. •	
, ,	ouritors, 742 and 277 convertors, programmable strouble (11 or 1, coo), computer terminology, computer around confidence, single str	np oontronord, rated, c	
ontrollers, electrica	al buses.		
	Advanced Materials	KZ	2
8POMY		1	. –
8POMY he knowledge gair	Advanced Materials	diagrams of binary sy	stems and otl
8POMY he knowledge gair oncepts. Special p	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of strcture defects, phase	diagrams of binary sy	stems and otl
8POMY he knowledge gair oncepts. Special p pplications.	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of structure defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of	diagrams of binary sy	stems and ot
8POMY he knowledge gair oncepts. Special p pplications.	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of strcture defects, phase	diagrams of binary sy material production f	vstems and other for key industr
BPOMY The knowledge gain concepts. Special pupplications. 21PYD1 The first part of the concepts.	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of structure defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1	diagrams of binary sy material production f	vstems and other for key industrated as a second as a
8POMY The knowledge gair oncepts. Special p pplications. 21PYD1 The first part of the ond gluing. It also in	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of stricture defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques	diagrams of binary sy material production f	vstems and other for key industrial and a second se
8POMY he knowledge gair oncepts. Special p pplications. 1PYD1 he first part of the ond gluing. It also in ables, pipes and h	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of stricture defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques introduces the basic metals and non-metals, including composites, which are part of modern aircraft. Last but not least, techniques	diagrams of binary sy material production f	vstems and ot for key industr 3 relding, solder
8POMY The knowledge gair oncepts. Special properties on the properties of the first part of the first	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of structure defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques introduces the basic metals and non-metals, including composites, which are part of modern aircraft. Last but not least, techniques to aircraft are presented.	diagrams of binary sy material production f KZ are mainly riveting, w ques for fitting spring:	relding, solder s, gears, gear
The knowledge gair concepts. Special papplications. 21PYD1 The first part of the cand gluing. It also in cables, pipes and he 21SBU1 Types of thesis (rev	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of structure defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques introduces the basic metals and non-metals, including composites, which are part of modern aircraft. Last but not least, techniques to aircraft are presented. Bachelor Thesis Seminar 1	diagrams of binary symmetrial production for MZ are mainly riveting, with ques for fitting spring:	relding, solder s, gears, gear
concepts. Special papplications. 21PYD1 The first part of the cand gluing. It also ir cables, pipes and h 21SBU1 Types of thesis (rev	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of structure defects, phase or rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques introduces the basic metals and non-metals, including composites, which are part of modern aircraft. Last but not least, techniques to aircraft are presented. Bachelor Thesis Seminar 1 iew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, contents of the primary materials and proposals).	diagrams of binary symmetrial production for MZ are mainly riveting, with ques for fitting spring:	relding, solder s, gears, gear
8POMY The knowledge gair oncepts. Special p pplications. 21PYD1 The first part of the ond gluing. It also in	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of stricture defects, phase rocesses of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques introduces the basic metals and non-metals, including composites, which are part of modern aircraft. Last but not least, techniques	diagrams of binary sy material production f	rstems and for key indu
18POMY The knowledge gair concepts. Special properties applications. 21PYD1 The first part of the rand gluing. It also in cables, pipes and heard 15BU1 Types of thesis (revisio cite). Analyzing the thesis (revisio cite). Analyzing the thesis (revisio cite).	Advanced Materials ned in primary materials course is further developed. In greater physical detail it explains dynamics of stricture defects, phase or processes of structure control are discussed. The gained knowledge is utilized on description of contemporary technologies of a Aircraft Maintenance Technology 1 course, which introduces students to the basic techniques of joining both metallic and non-metallic materials. These techniques not not be a sic metals and non-metals, including composites, which are part of modern aircraft. Last but not least, techniques to aircraft are presented. Bachelor Thesis Seminar 1 iew, applied research, basic research, thesis dealing with design proposals). Working with citation sources (citation sources, consisted of the art (standards of research writing). Defining the limitations of the state of the art. Introduction to the thesis metals.	diagrams of binary sy material production for material production, we question fitting springs are mainly riveting, we question fitting springs are mainly riveting, we call the following springs are mainly riveting to the fitting springs are mainly riveting are material production.	relding, sc s, gears,

stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles of rhetoric.

Name of the block: Elective courses Minimal number of credits of the block: 0

The role of the block: V

Code of the group: VP-BP-TUL

Name of the group: Bachelor Full-Time TUL voluntary

Requirement credits in the group: Requirement courses in the group:

Credits in the group: 0 Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
21PIS1	Piston Engine 1 Jakub Kraus Jakub Kraus Jakub Kraus (Gar.)	Z	0	2P+2C	Z	V
21PIS2	Piston Engine 2	Z	0	2P+2C	L	V
21PXE1	Training Course 1 Kate ina Stuchlíková, Ond ej Vítovec Ond ej Vítovec	Z	0	0P+4C	Z	V
21PXE2	Training Course 2	Z	0	0P+4C	L	V
11SCFZ	Seminar of Physics Old ich Hykš, Zuzana Malá, Tomáš Vít , Jana Kuklová Zuzana Malá Zuzana Malá (Gar.)	Z	0	0P+2C	Z	V

Characteristics of the courses of this group of Study Plan: Code=VP-BP-TUL Name=Bachelor Full-Time TUL voluntary

21PIS1	Piston Engine 1	Z	0			
Piston engine efficiency, duty cycles, stroke and compression ratio, engine layout and ignition. Engine power calculation. Measurement of key engine parameters: pressure, temperature						
fuel flow. Engine design	. Valve distributions. Starting systems. Engine exhaust systems. Engine cooling system.					
21PIS2	Piston Engine 2	Z	0			
Design and operation of	r supercharged engines. Lubrication and fuel system. Engine mounting and covers. Engine storage. Construction of hoses ar	nd pipes. Startup _l	orocedure.			
Inspection and storage	of the engine, including its accessories.					
21PXE1	Training Course 1	Z	0			
Tools identification and	their use. Various material treatment. Joining methods for different joints and their removal.	'	'			
21PXE2	Training Course 2	Z	0			
Special tools and meas	Special tools and measurement equipment identification and their use. Basics of machine-tool control.					
11SCFZ	Seminar of Physics	Z	0			
Solving problems on kir	nematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermodynamics.	1	1			

List of courses of this pass:

Code	Name of the course	Completion	Credits
11CAL1	Calculus 1	Z,ZK	7
Sequence of real nu	umbers and its limit. Basic properties of mappings. Function of one real variable, its limit and derivative. Indefinite integral, Newton integral. Riemann integral. First-order differential equations, linear differential equations.	al, Riemann integr	al, imprope
11CAL2	Calculus 2	Z,ZK	5
Lineai	r differential equations and their systems, differential calculus of functions of several real variables. Riemann integral in Rn. Line and s	surface integrals.	
11ELMO	Electromagnetic Field and Optics	Z,ZK	5
	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 electrostatics	ric current.	
11GIE	Geometry	KZ	3
Differential geome	try of curves - parameterization, the arc of the curve, torsion and curvature, Frenet's trihedron. Kinematics - a curve as a trajectory of	the motion, the ve	elocity, and
	acceleration of a particle moving on a curved path.		
		Z,ZK	3
11LA	Linear Algebra		
	Linear Algebra ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classifications.	r solvability. Deterr	ninants an
	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their	r solvability. Deterr	ninants an
Vector spaces (line 11MSP System and subsys	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of differences.	r solvability. Deterr on. Z,ZK ntial and differentia	4 Il equation
Vector spaces (line 11MSP System and subsys	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function	r solvability. Deterr on. Z,ZK ntial and differentia	4 Il equations
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Vector spaces (line 11MSP System and subsys	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics	r solvability. Deterron. Z,ZK ntial and differentia n. Stability of LTI s	4 Il equations
Vector spaces (line 11MSP System and subsys Linear and non	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody	r solvability. Deterron. Z,ZK ntial and differentia n. Stability of LTI s Z namics.	4 al equations ystems.
11MSP System and subsys Linear and non 11SCFZ	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes Item, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK	4 all equations ystems.
11MSP System and subsys Linear and noni 11SCFZ	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes Item, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametri	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK	4 all equations ystems.
Vector spaces (line 11MSP System and subsys Linear and noni 11SCFZ 11STAT Basics of probabil	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes Item, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametr Regression and correlation analysis	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK ric tests Nonparam	4 all equations systems. 0 4 netric tests
Vector spaces (line 11MSP System and subsys Linear and noni 11SCFZ 11STAT Basics of probabil	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes Item, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametr Regression and correlation analysis Project 1 TUL	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK ric tests Nonparan	4 all equations systems. 0 4 netric tests
11MSP System and subsys Linear and non 11SCFZ 11STAT Basics of probabil 11X31U 11X32U	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes Item, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametr Regression and correlation analysis	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK ric tests Nonparan Z Z	4 all equations systems. 0 4 netric tests
11MSP System and subsys Linear and noni 11SCFZ 11STAT Basics of probabil	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes Item, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametr Regression and correlation analysis Project 1 TUL	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK ric tests Nonparam Z Z	4 all equations systems. 0 4 netric tests
Vector spaces (line 11MSP System and subsys Linear and non 11SCFZ 11STAT Basics of probabil 11X31U 11X32U	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametr Regression and correlation analysis Project 1 TUL Project 2 TUL	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK ric tests Nonparan Z Z	4 dequations yestems. 0 4 enetric tests
Vector spaces (line 11MSP System and subsys Linear and noni 11SCFZ 11STAT Basics of probabil 11X31U 11X32U 11X33U	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametric Regression and correlation analysis Project 1 TUL Project 2 TUL Project 3 TUL	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK ric tests Nonparam Z Z	4 dequations ystems. 0 4 enetric tests 1 2 1
Vector spaces (line 11MSP System and subsys Linear and noni 11SCFZ 11STAT Basics of probabil 11X31U 11X32U 11X33U 12X31U	ar combinations, linear independence, dimension, basis, coordinates). Matrices and operations. Systems of linear equations and their their applications. Scalar product. Similarity of matrices (eigenvalues and eigenvectors). Quadratic forms and their classification. Modeling of Systems and Processes tem, external and internal system description, continuous and discrete system, mathematics as a tool, examples of formulation of different linear system, stationary and non-stationary system, causality. Convolutional integral. Laplace and Z transformations. Transfer function Discretization of continuous systems. System interconnection. Seminar of Physics Solving problems on kinematics, particle dynamics, dynamics of particle systems and rigid body. Continuum mechanics, thermody Statistics ity Descriptive statistics Population and sample, limit theorem Point estimate, construction and properties Interval estimates Parametr Regression and correlation analysis Project 1 TUL Project 2 TUL Project 3 TUL Project 1 TUL Project 1 TUL	r solvability. Deterron. Z,ZK Intial and differentian. Stability of LTI s Z Inamics. Z,ZK Itic tests Nonparam Z Z Z Z Z	4 dequations: 0 4 determined to the second s

will learn to work with variables of basic data types (integer, floating point and string) and the list data structure in their programs.

14ENIK	Electronics	KZ	4
Analog and digita	Electroffics representation, radix systems, combinational logical circuits, Karnaugh maps, logical circuits realization, sequential logical circuits, in		1 .
	counters, A/D and D/A convertors, programmable circuits (FPGA, SoC), computer terminology, computer architecture, single-chip contri	•	
	controllers, electrical buses.		
14KSP	Constructing with Computer Aid	KZ	2
CAD systems" ter	m determination. CAD role in projecting system model. Existing CAD systems on Czech market. Project creation, basic common work	rules in graphic	application
and CA systems.	Co-ordinated systems, CAD environment skill (basics of constructing, dimensioning, modifications, user interfaces, projecting possible	lites, AutoCAD er	nvironment
	profiles, drawings with raster foundaments).		
14PRG	Programming	, KZ	2
_	ramming builds on and fully extends the course 14ASD (Algorithmization and Data Structures). The knowledge of the Python program		-
ere so mai me pa	rticipant gains skills and can apply them to solve various follow-up tasks. Main topics: lists, multidimensional arrays, sorting and search working with date and time, regular expressions, functions and procedures, working with files (CSV, JSON, XML).	iiig, tupies, sets,	uictionane
14X31U	Project 1 TUL	Z	1
14X31U	Project 2 TUL	Z	2
14X32U	Project 3 TUL	Z	1
	-		
14ZEL1	Electronics Basics 1 ns, electron theory, static electricity, electrical conductivity and terminology, electrical resistance, resistor, capacity and capacitor, indu	Z,ZK	5
	icity method, superposition, node-voltage method, mesh - circuit method, AC current, characteristics of AC waveforms, 3-phase el. po		
	symbolic method, power, filters.	iroi, rio oirouito	010
14ZEL2	Electronics Basics 2	Z.ZK	4
	ricity and the DC power sources, magnetism, DC motors and generators, AC motors (synchronous, asynchronous, 1-phase, 3-phase), s	,	
	AC generators.		
14ZLEN	Basics of Electronics	KZ	3
Semiconductors,	PN junction, diodes, rectifiers, SCR, diac, triac, Zener diode, Schottky diode, photodiode, bipolar junction transistor, transistor circuits,	unipolar junction	tranzistors
	uits, technology of integrated circuits, feedback theory, operational amplifiers, printed circuit boards, servo-systems, oscillators, switch		_
15JZ1A	Foreign Language - English 1	Z	3
rammatical Struc	tures and Style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and cor		. Elementa
	stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles o		_
15JZ2A	Foreign Language - English 2	Z,ZK	3
rammaticai struct	ures and style. Selection of conversation topics relating to transportation sciences. Extending vocabulary, developing perceptive and cor- stylistics forms. Oral and written presentation of original research. Academic text principles and reading comprehension. Principles o		. Elementa
15X31U		Z	1
	Project 1 TUL	Z	
15X32U	Project 2 TUL		2
15X33U	Project 3 TUL	Z	1
16LLA1	Aircraft 1	KZ	3
ircraft structural a	nd conceptual design types - definitions and basic knowledge of the problem. Development of requirements, aircraft definitions and ca	-	raft loadings
16LLA2	Systems of primary and secondary airframe structure. Airframe and propulsion unit. Lectures are devoted to aeroplane topic Aircraft 2	z,ZK	2
-	· –		
idi ididotal ci 3 i cop			lity of aircra
	consibility, responsibilities of operator and professional supervising. Legislation in area of airworthiness. International and national stan- structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatique strength. Aircraft structure lifetime presur	dards. Static solid	lity of aircra
16X31U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur	dards. Static solid	lity of aircra
16X31U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Project 1 TUL	dards. Static solid nption.	1
16X32U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Project 1 TUL Project 2 TUL	dards. Static solid nption. Z Z	1 2
16X32U 16X33U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Project 1 TUL Project 2 TUL Project 3 TUL	dards. Static solid nption. Z Z Z	1 2 1
16X32U 16X33U 17X31U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Project 1 TUL Project 2 TUL Project 3 TUL Project 1 TUL	dards. Static solid nption. Z Z Z Z	1 2 1 1
16X32U 16X33U 17X31U 17X32U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Project 1 TUL Project 2 TUL Project 3 TUL Project 1 TUL Project 1 TUL Project 2 TUL	dards. Static solid nption. Z Z Z Z Z	1 2 1 1 1 2
16X32U 16X33U 17X31U 17X32U 17X33U	structures. Aeroelasticity. Inherent and operational reliability of aircraft structure. Fatigue strength. Aircraft structure lifetime presur Project 1 TUL Project 2 TUL Project 3 TUL Project 1 TUL Project 1 TUL Project 2 TUL Project 2 TUL Project 3 TUL Project 2 TUL Project 3 TUL	dards. Static solid nption. Z Z Z Z Z Z Z	1 2 1 1 2 1
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21AVIA	Avionics	Z,ZK	3
			_
	avigation instrumentation, central electronic aircraft monitoring system, electronic fligh	t instrument system	i, integrated
	t control and optimization system, on-board and information systems.		
21KSE2 Airo	raft Construction and Systems 2	Z,ZK	7
Aircraft systems requirements and functions - air condition, pressu	ization, oxygen systems, tyres, hydraulics, fuel systems, electrical systems, deicing	system, fire protect	ion system.
21KSY1 Airo	raft Construction and Systems 1	Z,ZK	7
	flight controls, undercarriage, aircraft pylon, nacelle. Aircraft systems requirements a	1 ' 1	nage, water
	distribution systems and aircraft lighting.		
24KTVI Aircraft (7	3
	Structures and Production Technology	<u> </u>	_
	production, within which excursions to production and maintenance organizations wil		
	aircraft components, engines and propellers from traditional (metal) and modern (c	omposite) materiais	
21LAU1 Aviation E	nglish 1 for Technology of Maintenance	Z	2
Lectures include various types of the language exercises and ar	e focused on the following topics - aicraft construction components, aicraft systems	and principles, mair	ntenance
technology, maintenar	ce organizations, maintenance tools and equipment, material science.		
21LAU2 Aviation E	nglish 2 for Technology of Maintenance	Z	2
	cused on the following topics - aicraft systems and principles, maintenance technolog	v. maintenance or	anizations.
	nd equipment, material science and manterials application, ecology.		,
	tion Maintenance Human Factors	Z,ZK	5
	rmance and limitations, factors influencing performance, social psychology, commun		
21LES2	Aviation Legislation 2	KZ	2
	Part 66, Part 145, Part 147, Part CAMO, Part CAO, Commission regulation (EU) 965	2012	
21LGI1	Aviation Legislation 1	Z	2
1	AO, EASA. Part M and ML (continuing airworthiness), maintenance programmes, AE)s, airworthiness re	views. Part
	itial airworthiness), design and production of aircraft.	-	
21LRY1	Aircraft Engines 1	KZ	3
	eristics and construction schemes. Propellers, operational characterictics. Turbine er		-
	Turbojet and turbofan engines, basic construction modules, and their operational ch		
21LRY2	Aircraft Engines 2	Z,ZK	3
Compressors, centrifugal compressor, combustion chamber, turbo	shaft engines, ramjets, power, thermal efficiency and fuel consumption, starting aircr	aft turbine engines	, idling and
	idling speed.		
21PIS1	Piston Engine 1	Z	0
Piston engine efficiency, duty cycles, stroke and compression ratio,	engine layout and ignition. Engine power calculation. Measurement of key engine para	meters: pressure, te	emperature,
fuel flow. Engine design. Valve of	istributions. Starting systems. Engine exhaust systems. Engine cooling system.		
21PIS2	Piston Engine 2	7	0
	fuel system. Engine mounting and covers. Engine storage. Construction of hoses an	l — — ∣ d nines Startun nr	-
	on and storage of the engine, including its accessories.	a pipes. Otal tap pi	occuurc.
· · · · · · · · · · · · · · · · · · ·		71/	
21PRJ2	Instrumentation 2	ZK	3
	directional gyro), inertial instruments, recording and monitoring systems, warning sy	stems (TCAS, GP)	WS), AFCS
	ust), FMS, flight envelope protection, communication systems, flight computers.		
21PUP1	Instrumentation 1	ZK	3
Basic construction principles of instrumentation, electronic displa	ys, basics of measurement - sensitivity and errors, engine instrumentation (pressure	gauges, thermome	eters, fuel
quantity and fuel flow measurement, torque and EPR measuremen	t), indication in other aircraft systems (position, fire and icing indication, vibration mo	nitoring, pressurisa	tion system
monitoring, aerome	tric instruments (sensors, altimeter, air speed indicator, VSI, ADC).		
21PXE1	Training Course 1	Z	0
Tools identification and their use.	Various material treatment. Joining methods for different joints and their removal.		
21PXE2	Training Course 2	Z	0
	nent equipment identification and their use. Basics of machine-tool control.	_	-
	craft Maintenance Technology 1	KZ	3
l l	chart Mainternance Technology 1 chniques of joining both metallic and non-metallic materials. These techniques are ma	1	
			•
	cluding composites, which are part of modern aircraft. Last but not least, techniques	ioi iiuiig spilligs, g	cars, year
	ables, pipes and hoses to aircraft are presented.	1/7	
	craft Maintenance Technology 2	KZ	4
	on methods, including non-destructive ones, that are used in aviation. Focus is also o		
and corrosion. Students are also introduced to aircraft handling met	nods and the effect of the environment on the operation of the aircraft. Methods of wei	ghing and balancin	g an aircraft
are intro	luced, including the determination of its centre of gravity.		
21PYD3 Air	craft Maintenance Technology 3	KZ	5
	involved in heavy aircraft maintenance, maintenance planning and also technical doc	cumentation. Last b	ut not least,
this course introduces how to deal with various aircraft system failure	s as well as various structural damage and aircraft modifications. Students are also intr	oduced to the self m	anagement
-	and storage procedures in heavy aircraft maintenance.		-
21RATE	Radiotechnology	ZK	2
	ansmission, signal processing, modulations, signal coding, radio transceivers, anter	1 1	
Try and try propagation, and opposition, and the	systems in aviation.	,	
21SBU1	Bachelor Thesis Seminar 1	Z	1
	aling with design proposals). Working with citation sources (citation sources, citation	1 1	styles how
	search writing). Defining the limitations of the state of the art. Introduction to the the		otyico, ⊓UW
			4
21SBU2	Bachelor Thesis Seminar 2	Z	1
1	state, specification of the problem, objectives and hypotheses). Definition of materia	-	proach to
	esults, formulation of thesis conclusions. Basics of LaTeX, working with LaTeX and W		
21SBU3	Bachelor Thesis Seminar 3	Z	. 1
	sentation, basic statistical reasoning, validation of results and designs. Achieving the	objectives of the th	nesis and
evaluation of hypothesis te	sts. Preparation of the presentation, principles of presentation of the thesis.		

21TUR1	Turbine Engines 1	Z,ZK	7
	rse is focused on the explanation and description of the purpose, operation and construction characteristics of aircraft turbojet and turb	•	ermal engine,
the	rmal cycle and its basic parameters, power output and thermal efficiency, basic construction modules, operational and construction c	haracteristics.	
21TUR2	Turbine Engines 2	Z,ZK	7
	course is focused on the explanation and description of the purpose, operation and construction characteristics of following aircraft t	•	
- lubrication syste	em, cooling and internal air systems, fuel systems, starting and ignition, controls and instrumentation. Purpose, operation principles a	and construction s	chemes of
	turboprop engines, turboshaft and auxiliary power units.		,
21UPUL	Introduction to Aircraft Maintenance Technology	Z	3
	an overview of safe work practices as well as an insight into the history of aircraft maintenance. In addition, tools used in heavy aircraft		I
	as basic care procedures. A significant portion of the course is devoted to technical drawings as well as the Electrical Wiring Inspection		`
21V	Aircraft Propellers	Z,ZK	6
	Theory of propeller blade, propeller load, propeller construction, control of blade angle, de-icing system, maintenance and repair of	•	
21X31U	Project 1 TUL	Z	1
21X32U	Project 2 TUL	Z	2
21X33U	Project 3 TUL	Z	1
21ZKL1	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 pri	essures around w	ing, 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	e, devices for
	lift and drag increase.		
21ZLKS	Basics of Aircraft Structures and Systems	KZ	4
E	Basics of screening, technical drawing, technological and operational signs. Hydraulic, pneumatic, fuel, electricity and block diagrams	in aviation.	
21ZT	ATM Systems	ZK	2
The course intr	oduces classical and modern facilities, systems and technologies designated for ATS. Student obtains knowledge of technical princip	les and solutions	as far as
	communication, navigation and surveillance aviation systems are concerned.		
22X31U	Project 1 TUL	Z	1
22X32U	Project 2 TUL	Z	2
22X33U	Project 3 TUL	Z	1
23X31U	Project 1 TUL	Z	1
23X32U	Project 2 TUL	Z	2
23X33U	Project 3 TUL	Z	1

For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-11-14, time 08:52.