## Study plan

# Name of study plan: Nuclear and Particle Physics

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Nuclear and Particle Physics

Type of study: Bachelor full-time

Required credits: 0

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

Note on the plan:

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 0

The role of the block: P

Code of the group: BSPJCFAJ1

Name of the group: BS P\_J FBA 1st year

Requirement credits in the group: In this group you have to gain at least credits (at most 0) Requirement courses in the group: In this group you have to complete at least 14 courses

Credits in the group: 0 Note on the group:

Note on the gi	oup.					
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
02YELMA	Electricity and Magnetism	Z,ZK	6	4+2	L	Р
01YLAL	Linear Algebra 1	Z	2	2P+2C		Р
01YLALZ	Linear Algebra 1, exam	ZK	2	0P+0C		Р
01YLAL2	Linear Algebra 2	Z,ZK	4	2P+2C		Р
01YMAN	Calculus 1	Z	4	4+4		Р
01YMANZ	Calculus 1, exam	ZK	4	0P+0C		Р
01YMAN2	Calculus 2	Z,ZK	8	4P+4C		Р
02YMECH	Mechanics	Z	4	4+2	Z	Р
02YMECHZ	Mechanics - Examination	ZK	2	-	Z	Р
00YPT	Orientation Week Petr Ambrož Petr Ambrož (Gar.)	Z	2	týden	Z	Р
02YTER	Heat and Molecular Physics	Z,ZK	4	2+2	L	Р
02YZM1	Foundations of Physical Measurements 1	ZK	2	2P+0C	Z	Р
02YZM2	Foundations of Physical Measurements 2	KZ	4	0P+4L	L	Р
18YZPRO	Basics of Programming Miroslav Virius Miroslav Virius (Gar.)	Z	4	4C	Z	Р

#### Characteristics of the courses of this group of Study Plan: Code=BSPJCFAJ1 Name=BS P\_J FBA 1st year

UZYELIVIA	Electricity and Magnetism	∠,∠N	О
Electric charge, Coulon	b's law, electrostatic field, Gauss' law. Electric dipole, polarization. Conductors anddielectrics. Electric current and circuits, co	onductivity. Basics	of the relativity
theory. Electrodynamic	forces,magnetic field. Magnetic dipole, magnetics. Electromagnetic induction, ac currents. Electromagnetic waves,Maxwell ed	quations	
01YLAL	Linear Algebra 1	Z	2
1. Vector space. 2. Lines	ar dependence and independence. 3. Basis and dimension. 4. Subspaces of vector spaces. 5. Linear mappings. 6. Matrices o	f linear mappings	. 7. Frobenius
theorem.			
01YLALZ	Linear Algebra 1, exam	ZK	2
01YLAL2	Linear Algebra 2	Z,ZK	4

Outline: 1. Inverse matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian and quadratic forms. 5. Scalar product and orthogonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 2. Methods of calculation of determinants. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonality. Calculation of orthogonal complements. 6. Geometry exercises and examples. 7. Adjoint operators.

01YMAN	Calculus 1	Z	4
Basic calculus (rea	al analysis, functions of one real variable, differential calculus).	' '	
01YMANZ	Calculus 1, exam	ZK	4
01YMAN2	Calculus 2	Z,ZK	8
1. Continuation of	differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on seri	es, absolute and conditional co	onvergence 3.
Real and complex	$power series, the \ Cauchy-Hadamard \ theorem, \ expansion \ of function \ into \ power series, \ summation \ of infinite \ series. \ 4.$	Theory of integrals: primitives,	definite integra
(Riemann definitio	on), techniques of integration and application of integrals, Generalized Riemann integral		
02YMECH	Mechanics	Z	4
ntroduction to phys	sics, physical quantities and units. Particle kinematics, basic types of motion and theirsuperposition. Particle dynamics,	one-dimensional equations of	motion, motior
	ld, forces innoninertial reference frames. Mechanics of system of free particles, two-body problem, collisions. Mechanic	os ofrigid body, rotation. Fundar	mentals of
	nics, elasticity, hydrodynamics. Sound.		
02YMECHZ	Mechanics - Examination	ZK	2
The content of the	subject is the examination according to the plan of studies.		
00YPT	Orientation Week	Z	2
The preparatory w	veek is intended for incoming bachelor's students. It includes an introduction to the organizational requirements of univ	ersity studies and introductory	lectures for the
first semester.			
02YTER	Heat and Molecular Physics	Z,ZK	4
Thermal expansion	n of materials, heat transfer; stationary and non-stationary heat conduction, heat transfer and penetration; 1st and 2nd	thermodynamic principle, idea	al and real gas,
entropy; non-chem	nical systems: dielectric and magnetic materials; Maxwell relations and thermodynamic potentials; kinetic theory: Maxwell	ell's velocity distribution,equipa	rtition theorem
02YZM1	Foundations of Physical Measurements 1	ZK	2
The lecture is desi	igned for students of physical specializations (Experimental particle physics, Physical engineering, Nuclear engineerin	g), however, it can be attended	by students of
	ne goal of the lecture is to introduce the basics of physical measurements, the methods of processing and evaluation of	f acquired data on a PC. Stude	ents learn the
basic habits of wor	rk in a physics lab.		
02YZM2	Foundations of Physical Measurements 2	KZ	4
The lecture is desi	igned for students of physical specializations (Experimental particle physics, Physical engineering, Nuclear engineerin	g), however, it can be attended	by students of
other branches. Th	ne goal of the lecture is to introduce the basics of physical measurements, the methods of processing and evaluation of	f acquired data on a PC. Stude	ents learn the
basic habits of wo	rk in a physics lab.		
18YZPRO	Basics of Programming	Z	4
This course is inte	ended mainly for students with little or no experience in programming. It familiarizes the students with the basic concept	ts in programming and with the	Python
	, , , , , , , , , , , , , , , , , , , ,		

Code of the group: BSPJCFAJ2

Name of the group: BS P\_J FBA 2nd year

Requirement credits in the group: In this group you have to gain at least credits (at most 0) Requirement courses in the group: In this group you have to complete at least 10 courses

Credits in the group: 0 Note on the group:

1010 011 1110 9	· • • · · ·					
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
02YEXF	Experimental Physics Barbara Antonina Trzeciak	ZK	2	2P+0C	Z	Р
02YPRA1	Experimental Laboratory 1  Jaroslav Biel ik	KZ	6	0+4	Z	Р
02YPRA2	Experimental Laboratory 2  Jaroslav Biel ik	KZ	6	0+4	L	Р
01YANB3	Calculus B 3	Z,ZK	8	4P+4C		Р
01YANB4	Calculus B 4	Z,ZK	6	2P+4C		Р
12YNME1	Numerical Methods 1 Jan Vábek, Pavel Váchal Pavel Váchal Ivan Richter (Gar.)	Z,ZK	4	2+2	L	Р
02YTEF1	Theoretical Physics 1 Petr Novotný, Ji í Hrivnák Petr Novotný Ji í Hrivnák (Gar.)	Z,ZK	4	2+2	Z	Р
02YTEF2	Theoretical Physics 2 Petr Novotný	Z,ZK	4	2+2	L	Р
02YTSFA	Thermodynamics and Statistical Physics	Z,ZK	4	2+2	L	Р
02YVOAF	Waves, Optics and Atomic Physics	Z,ZK	6	4+2	Z	Р

### Characteristics of the courses of this group of Study Plan: Code=BSPJCFAJ2 Name=BS P\_J FBA 2nd year

02YEXF | Experimental Physics | ZK | 2 The goal of this subject is to introduce the students the principles of physics measurements, their techniques, methods and instruments that are used for such measurements, and the analysis of measured data.

02YPRA1 | Experimental Laboratory 1 KZ | 6

Lecture is intended especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Engineering). But it can be also attended by students interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with theliterature), the implementation of the measurement (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation of results. At the same time practically extendthe knowledge gained in lectures on physics.

02YPRA2 Experimental Laboratory 2	KZ	6
Lecture is intended especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuc	lear Engineering). B	ut it can be also
attended by students interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work	with theliterature), th	ne implementation
of the measurement (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and e	valuation of results.	At the same time
practically extendthe knowledge gained in lectures on physics.		
01YANB3 Calculus B 3	Z,ZK	8
1. Functional sequences and series - convergence range, criteria of uniform convergence, continuity, limit, differentiation and integration of function	onal series, power s	eries, Series
Expansion, Taylor's theorem. 2. Ordinary differential equations - equations of first order (method of integration factor, equation of Bernoulli, separ	ation of variables, h	omogeneous
equation and exact equation) and equations of higher order (fundamental system, reduction of order, variation of parameters, equations with consta	ant coefficients and	special right-hand
side, Euler differential equation). 3. Metric spaces - metric, norm, scalar product, neighborhood, interior and exterior points, boundary point, isola	ted and non-isolated	d point, boundary
of set, completeness of space, Hilbert spaces. Orthogonal polynomials. Complete orthogonal systems. 4. Fourier series - expansion of functions into	o Fourier series, trig	onometric Fourier
series and their convergence. 5. Differential calculus of functions of several variables - limit, continuity, partial and directional derivative, gradient,	total derivatives and	l tangent plane,
Taylor series, elementary terms of vector analysis, Jacobi matrix. 6. Functions defined implicitly by one or several equations.		
01YANB4 Calculus B 4	Z,ZK	6
[1] Diferenciální po et funkcí více prom nných a funkcionálních vektor . [2] Funkce zadané implicitn . [3] Taylorovy ady funkce více prom nných	n. [4] Regulární zobr	azení, zám na
prom nných, nekartézské soustavy sou adnic. [5] Lokální, vázané a globální extrémy funkce více prom nných. [6] Základy teorie míry a obrys kr	onstrukce Lebesgue	ovy míry. [7]
Integrální po et funkce více prom nných - Riemann v a Lebesgue v integrál, základní vlastnosti, Fubiniova v ta, v ta o substituci. Leviho a Leb	esgueova v ta. Limi	ta, spojitost a
derivace integrálu podle parametru. [8] Integrály po k ivkách a plochách. Integrální v ty.		
12YNME1 Numerical Methods 1	Z,ZK	4
There are explained the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology	•	
important for physicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated cor	nputational environm	nent MATLAB is
used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.		
02YTEF1 Theoretical Physics 1	Z,ZK	4
The course is an introduction to analytical mechanics. The students acquire knowledge of the basic concepts of the Lagrange and Hamiltonian form	nalism as well as dif	erent approaches
to description of dynamics (Newtons, Lagrange, Hamilton and Hamilton-Jacobi equations). The efficiency of these methods is illustrated on elem-	entary examples like	the two-body
problem, the motion of a system of constrained mass points, and of a rigid body. Advanced parts of the course cover differential and integral prin-	ciples of mechanics.	The subject is
the first part of the course of classical theoretical physics (02TEF1, 02TEF2).		
02YTEF2 Theoretical Physics 2	Z,ZK	4
Tensors and transformations in physics. Mechanics of point mass, rigid body and continuum. The special theory of relativity: relativistic mechanic	s and classical field	theory in the
Minkowski space-time. Classical electrodynamics: Maxwell's equations in the Minkowski space-time, electromagnetic waves in dielectric media, e	electromagnetic radia	ation in the dipole
approximation.		
02YTSFA Thermodynamics and Statistical Physics	Z,ZK	4
Foundation of thermodynamics and statistical physics. Thermodynamic potential, the Joule Thomson effect, conditions of equilibrium, the Braun-Le	Chatelier principle.	statistical entropy.
Basics of many body description from a statistical point of view (classical and quasiclassical regime within the frame of a canonical and grand-car	nonical ensemble, F	ermi gas, models
of crystals and the black hody radiation). The Boltzmann equation is used to discusses simple transport phenomena		

Wave phenomena in mechanics and electromagnetism: modes, standing and travelling waves, wave packets indispersive media. Wave optics: polarization, interference, diffraction, coherence. Geometrical optics. Introduction toquantum physics: black body radiation, quantum of energy, photoeffect, the Compton effect, the de Broglie waves, the Schrodinger

Z,ZK

equation, stationary states and spectra of finite systems. Code of the group: BSPJCFAJ3

Name of the group: BS P\_J FBA 3rd year

Waves, Optics and Atomic Physics

Requirement credits in the group: In this group you have to gain at least credits (at most 0)

Requirement courses in the group: In this group you have to complete at least 10 courses

Credits in the group: 0 Note on the group:

02YVOAF

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
02BPJC1	Bachelor Project 1 Jaroslava Óbertová Jaroslav Biel ík (Gar.)	Z	5	0P+5C	Z	Р
02BPJC2	Bachelor Project 2 Jaroslava Óbertová Jaroslav Biel ík (Gar.)	Z	10	0P+10C	L	Р
02YDPD1	Detectors and Principles of Detection 1	ZK	2	2P+0C	Z	Р
02YDPD2	Detectors and Principles of Detection 2	ZK	4	4P+0C	L	Р
02YKM1	Quantum Mechanics 1	Z,ZK	6	4P+2C	Z	Р
02YKM2	Quantum Mechanics 2	Z,ZK	6	4P+2C	L	Р
01RMFB	Equations of Mathematical Physics B	Z,ZK	5	2P+2C		Р
02YSF	Subatomic Physics	Z,ZK	6	4+2	Z	Р
02YSF2	Subatomic Physics 2  Jaroslava Óbertová	Z,ZK	6	4+2	L	Р
02YVS1	Workshop 1 Jaroslav Biel ík	Z	1	7D	Z	Р

Characteristics of the courses of this group of Study Plan: Code=BSPJCFAJ3 Name=BS P\_J FBA 3rd year

Bachelor Project 1

Abstract: The bachelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guided by the project supervisor during common regular meetings and discussions.

02BPJC2 **Bachelor Project 2** Abstract: The bachelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guided by the project supervisor during common regular meetings and discussions. 02YDPD1 Detectors and Principles of Detection 1 ZK 2 Abstract: The lectures introduce the main forms of interaction of some particles with matter. The goal is that the student gets an overview of what type of processes are possible and in which situations they may be dominant. Some applications to Medicine and to study the fundamental structure of matter are presented. Detectors and Principles of Detection 2 Abstract: The lectures introduce the main ideas needed to understand how detector systems work. It will be focused on gaseous detecting principles, scintilating principles and semiconductor detecting principles. Basic information about various detector constructions is provided. 02YKM1 Quantum Mechanics 1 6 Abstract: The lecture describes the birth of quantum mechanics and description of one particle and more particles by elements of the Hilbert space as well as its time evolution. Besides that it includes description of observable quantities by operators in the Hilbert space and calculation of their spectra. 02YKM2 Quantum Mechanics 2 Z,ZK 6 Abstract: The lecture expands the introduction to quantum mechanics with more general formalism of quantum theory, approximate methods and path integral. It summarizes the terminology and methods used in various applications of quantum mechanics and prepares the students for an effective scientific research and further study, in particular, of the modern formulations of quantum field theory. 01RMFB Equations of Mathematical Physics B Z,ZK 5 The subject of this course is solving integral equations, theory of generalized functions, classification of partial differential equations, theory of integral transformations, and solution of partial differential equations 02YSF Subatomic Physics The goal of these lectures is to present basic knowledge of particle physics. Students will become familiar with the structure of the matter, with elementary interactions and with basic laws of microcosmos. Lectures will include basics of quantum mechanics and the theory of relativity needed for the description of elementary particles behavior. Students will also become familiar with basic accelerating principles and with current particle physics experimental centers. Subatomic Physics 2 The aim of the course is to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic nuclei and the way they can be measured. They will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting familiar with thephysics of the cosmic radiation and applications of nuclear physics

02YVS1 Workshop 1 Abstract: Students will participate on annual Workshop J F, where they will present results obtained during the work on their bachelor thesis. During other presentations from students

and staff, they will also get familiar with scientific topics developed at the department and with methods other colleagues use for their scientific work

Name of the block: Compulsory elective courses

Minimal number of credits of the block: 0

The role of the block: PV

Code of the group: BSSPOLVEDYAJ

Name of the group: BS - Social Sciences

Requirement credits in the group:

Requirement courses in the group: In this group you have to complete at least 1 course

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
04YAPI	Presentation Course Jana Ková ová	Z	2	2S	Z	PV

#### Characteristics of the courses of this group of Study Plan: Code=BSSPOLVEDYAJ Name=BS - Social Sciences

04YAPI Presentation Course

The course will prepare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes discussions (expressing views, comments, agreement, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them after the presentation, which is a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a paper.

Code of the group: BSPJAZYKYZK Name of the group: BS P languages Requirement credits in the group:

Requirement courses in the group: In this group you have to complete at least 2 courses

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
04XAMZK	English for Intermediate Students Examination Jana Ková ová, Slav na Brownová Jana Ková ová Jana Ková ová (Gar.)	ZK	4		Z	PV

04XAPZK	English for Advanced Students Examination Slav na Brownová, Darren Copeland Jana Ková ová Darren Copeland (Gar.)	ZK	4	Z	PV
04XCESZZK	Czech for Foreigners Beginners - Examination Slav na Brownová Jana Ková ová Jana Ková ová (Gar.)	ZK	4	Z	PV
04XCESMZK	Czech for Intermediate Students Examination  Jana Ková ová Jana Ková ová (Gar.)	ZK	4	Z	PV
04XCESPZK	Czech for Foreign Students - Advanced Examination  Jana Ková ová Jana Ková ová (Gar.)	ZK	4	Z	PV
04XFMZK	French for Intermediate Students Examination V ra Šlechtová V ra Šlechtová (Gar.)	ZK	4	Z	PV
04XFPZK	French for Advanced Students Examination V ra Šlechtová V ra Šlechtová (Gar.)	ZK	4	Z	PV
04XFZZK	French for Beginners Examination V ra Šlechtová V ra Šlechtová V ra Šlechtová (Gar.)	ZK	3	L	PV
04XNMZK	German for Intermediate Students Examination Miloslava echová Miloslava echová (Gar.)	ZK	4	Z	PV
04XNPZK	German for Advanced Students Examination Miloslava echová Miloslava echová (Gar.)	ZK	4	Z	PV
04XRMZK	Russian for Intermediate Students Examination Zhanna Isaeva Zhanna Isaeva (Gar.)	ZK	4	Z	PV
04XRPZK	Russian for Advanced Students Examination Zhanna Isaeva Zhanna Isaeva (Gar.)	ZK	4	Z	PV
04XRZZK	Russian for Beginners Examination Zhanna Isaeva Zhanna Isaeva (Gar.)	ZK	3	L	PV
04XSMZK	Spanish for Intermediate Students Examination Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	ZK	4	Z	PV
04XSPZK	Spanish for Advanced Students Examination Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	ZK	4	Z	PV
04XSZZK	Spanish for Beginners Examination Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)  Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	ZK	3	L	PV

Characteristics of the courses of this group of Study Plan: Code=BSPJAZYKYZK Name=BS P languages

English for Intermediate Students Examination ΖK The course content is the examination as given by the study plan. The examination covers the AM1, AM2, and AM3 courses and consists of two parts - written (100 min) and oral (20-30 min). The student is expected to master the AM syllabus and demonstrate the ability to apply their knowledge gained in the three English courses. English for Advanced Students Examination The course content is the examination as given by the study plan. The student is supposed to demonstrate mastering the AP3 syllabus and the ability to apply their knowledge obtained in the three AP courses. The examination consists of 2 parts - written (100 min) and oral (30 min) and includes also oral presentation of a topic from the student's field of study. 04XCESZZK Czech for Foreigners Beginners - Examination 7K The course content is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04XCESZ1,2,3 courses and can only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher. 04XCESMZK Czech for Intermediate Students Examination 7K 4 The course content is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the CESM1,2,3 courses and can only be taken after successful completion of the 3 courses. Detailed information is to be obtained from the teacher. Czech for Foreign Students - Advanced Examination 7K The course content is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the CESP1,2,3 courses and can only be taken after successful completion of the 3 courses. Detailed information is to be obtained from the teacher. 04XFMZK French for Intermediate Students Examination ZK 1 The content is the examination as given by the study programme. The whole French programme is ended with an examination covering the contents of FM1-FM3. The examination consists of a written and oral part and is organized according to Examination Instructions, a document available on the web. French for Advanced Students Examination The whole French program is ended with an examination covering the contents of FP1-FP3. The examination consists of a written and/or an oral part and is organized according to Examination Instructions, a document available on the web. Assessment of the presentation is included into the examination grading. 04XF77K French for Beginners Examination 7K 3 The content is the examination as given by the study plan. The course is terminated with an examination consisting of oral and written part. The examination is ruled by the document Instruction for examination. Its content covers the levels FZ1 - FZ5. German for Intermediate Students Examination ZK The course content is the examination as given by the study plan. The whole German for Intermediate Students Course is completed by an examination consisting of two parts - written and oral, which cover the courses NM1 - NM3. The oral part follows after passing the written part successfully and after obtaining the 04NM3 assessment. More detailed information is to be obtained from the teacher. German for Advanced Students Examination ZK 04XNPZK The course content is the examination as given by the study plan. The whole German for Advanced Students Course is completed by an examination consisting of two parts - written and oral, which cover the courses NP1 - NP3. The oral part follows after passing the written part successfully and after obtaining the 04NP3 ungraded assessment. More detailed information is to be obtained from the teacher. Russian for Intermediate Students Examination 04XRMZK ZK. The course content is the examination as given by the study plan. The course is completed by taking a written and oral examination testing the knowledge and skills acquired in RM1 - RM3. Students are eligible for the oral examination only after a prior pass in RM3 and a successful written examination. Students are given instructions by the teacher. 04XRPZK Russian for Advanced Students Examination

The course content is the examination as given by the study plan. The course is completed by taking a written and oral examination testing the knowledge and skills acquired in RP1

- RP3. Students are eligible for the oral examination only after a prior pass in RP3 and a successful written examination. Students are given instructions by the teacher.

04XRZZK	Russian for Beginners Examination	ZK	3
The course content is	the examination as given by the study plan. The course is completed by taking a written and oral examination testing the know	vledge and skills a	cquired in RZ1
- RZ5. Students are 6	ligible for the oral examination only after a prior pass in RZ5 and a successful written examination. Students are given instructi	ons by the teache	r.
04XSMZK	Spanish for Intermediate Students Examination	ZK	4
The course content is	the examination as given by the study plan. XSMZK examination consists of two parts: written and oral; to be eligible for the w	ritten part, studen	ts will have
obtained non-graded	assessment for course XSM3. Oral examination follows the written part.		
04XSPZK	Spanish for Advanced Students Examination	ZK	4
The course content is	the examination as given by the study plan. Examination XSPZK consists of two parts, namely oral and written. The prerequis	ite for admission t	o oral part is
having passed the w	itten test. Examination content is based on syllabi of courses XSP1, XSP2, and XSP3 or on an individual study plan of the stud	dent.	
04XSZZK	Spanish for Beginners Examination	ZK	3
The course content is	the examination as given by the study plan. Examination consists of two parts - written and oral. Student can register for oral	examination only i	f he/she has
nassed the written ex	amination test		

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

The role of the block: V

Code of the group: BSPJCFAJV

Name of the group: BS P\_J FBA Optional courses

Requirement credits in the group: In this group you have to gain at least credits (at most 0)

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
02YDEF1	History of Physics 1	Z	2	2+0	Z	V
02YDEF2	History of Physics 2 Miroslav Myška	Z	2	2P+0C	L	V
01YFKO	Functions of Complex Variable	Z,ZK	3	2+1		V
02YFYS1	Physical Seminar 1	Z	2	0+2	Z	V
00YMAM1	Essentials of High School Course 1	Z	1	0+1	Z	V
00MAM2	Essentials of High School Math Course 2 Lukáš Heriban Lukáš Heriban (Gar.)	Z	1	0+1		V
02NSAD1	Simulations and Data Analysis Tools 1 Zden k Hubá ek Zden k Hubá ek (Gar.)	Z	2	2P+0C	Z	V
02NSAD2	Simulations and Data Analysis Tools 2 Zden k Hubá ek Zden k Hubá ek (Gar.)	Z	2	2+0		V
18NES1	Neural Networks 1 Zuzana Pet í ková <b>Zuzana Pet í ková</b>	KZ	5	2P+2C	L	V
01YNME2	Numerical Methods 2	KZ	2	2+0	L	V
15YCH1	General Chemistry 1 Ond ej Holas Petr Distler (Gar.)	Z	3	2+1	Z	V
15CH2	General Chemistry 2 Petr Distler, Václav uba, Ond ej Holas Petr Distler Petr Distler (Gar.)	Z,ZK	3	2+1	L	V
01YPRST	Probability and Statistics	Z,ZK	4	3+1	Z	V
18YPRC1	Programming in C++ 1 Miroslav Virius Miroslav Virius (Gar.)	Z	4	2+2	Z	V
18YPRC2	Programming in C++ 2 Miroslav Virius Miroslav Virius (Gar.)	KZ	4	2+2	L	V
02YROZ1	Seminar on Quark-Gluon Plasma 1  Jaroslav Biel ík	Z	2	2P+0C	Z	V
02YROZ2	Seminar on Quark-Gluon Plasma 2  Jaroslav Biel ík	Z	2	2P+0C		V
02YSTR	Special Theory of Relativity	ZK	2	2P+0C	L	V
TV-1	Physical Education	Z	1		Z	V
TV-2	Physical Education	Z	1		L	V
TV-3	Physical education	Z	1	0+2	Z	V
TV-4	Physical education	Z	1	0+2	L	V
02YUFEC	Introduction to Elementary Particle Physics  Jaroslav Biel ik	Z	2	2+0	Z	V
17YUING	Introduction to Engineering Jan Frýbort, Petr Haušild, Radek Mušálek Jan Frýbort (Gar.)	KZ	3	2P+1C	Z	٧

02UKP1	Introduction to Curves and Surfaces  Ladislav Hlavatý Ladislav Hlavatý (Gar.)	Z	2	1P+1C	L	V
02UKP2	Introduction to Curves and Surfaces 2 Ladislav Hlavatý Ladislav Hlavatý (Gar.)	Z	2	1P+1C	Z	V
02YUKT	Introduction to Quantum Theory	Z	2	2+0	L	V
01UP1	Introduction to Probability 1	Z,ZK	3	1P+1C		V
01UP2	Jan Vybíral Jan Vybíral Jan Vybíral (Gar.) Introduction to Probability 2	Z,ZK	3	1P+1C		V
12YUNXAP	Michaela Krbálková, Milan Krbálek Michaela Krbálková Milan Krbálek (Gar.) Introduction to UNIX	Z	2	1P+1C	L	V
	Ivan Richter Ivan Richter (Gar.) Vacuum Technology					
12YVKT	Ivan Richter Ivan Richter (Gar.)	KZ	4	2P+2L	Z	V
12YPYTH	Scientific Programming in Python Ivan Richter Ivan Richter (Gar.)	Z	2	0+2	L	V
12VTV	Scientific and Technical Computing Ivan Procházka Ivan Procházka (Gar.)	Z	2	1+1	L	V
18YZALG	Basics of Algorithmization  Miroslav Virius Miroslav Virius (Gar.)	Z,ZK	4	2+2	L	V
17YZEL	Basics of Electronics Martin Kropík Martin Kropík (Gar.)	KZ	3	2+2	Z	V
02ZSM	Introduction to the Standard Model Zden k Hubá ek Zden k Hubá ek (Gar.)	ZK	2	2+0		V
Characteristics of th		- DCD I E	Ontio	nol cour		
	e courses of this group of Study Plan: Code=BSPJCFAJV Name istory of Physics 1	=B5 P_J FE	SA Optio	nai cours	Z	2
Physics and its place in the Helenistic period, Archimed	e system of sciences. The relationship of man and nature. Natural sciences in ancient Or d. Arabic science, European science in Middle Ages. Renaissance - da Vinci, Giordano E	,			ers, Aristotl	e. Physics in
as experimental science. N 02YDEF2 H	ewton and his work. istory of Physics 2			1	7	2
-	istory or Enysics 2 nechanics after Newton, Bernoulli's, Euler, Lagrange. Historical development of optics, c	orpuscular and w	ave approad	 ch. Electricity	_	<del>-</del>
	electrodynamics and electromagnetism, Faraday and Maxwell. Thermodynamics and its	•		-	_	
	nck and Einstein. Discovery of radioaktivity, structure of atom, atomic nucleus, Rutherfor	rd and Bohr. The	way to nucle	ear energy, E	Elementary	oarticles,
	ept of Nature and Universe of today.				. 714	
01YFKO F	unctions of Complex Variable	ampley analysis i			Z,ZK	3
01YFKO For The course starts from outli	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of c			le are explai	ned in detai	l: the derivative
01YFKO For The course starts from outling of a complex function and to	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point	with respect to a	closed curv	le are explai e, Cauchy's	ned in detai integral the	l: the derivative orem, Morera's
01YFKO For The course starts from outling of a complex function and theorem, roots of a holomorem.	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of c	with respect to a	closed curv	le are explai e, Cauchy's	ned in detai integral the	l: the derivative orem, Morera's
01YFKO For The course starts from outling of a complex function and theorem, roots of a holomoutheorem.	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of continuations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle.	with respect to a	closed curv	le are explai e, Cauchy's	ned in detai integral the	l: the derivative orem, Morera's
O1YFKO For The course starts from outling of a complex function and to theorem, roots of a holomore theorem.  O2YFYS1 P.	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point	with respect to a e, Liouville's theor	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat	ned in detai integral theo es, Laurent	I: the derivative orem, Morera's series, residue
O1YFKO Find the course starts from outling of a complex function and to theorem, roots of a holomore theorem.  O2YFYS1 Problems and the course of the course	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of c he Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rphic function, analytic continuation, isolated singularities, the maximum modulus principl  hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us	with respect to a e, Liouville's theoretanding of fundan	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theores, Laurent  Z ented in the	I: the derivative orem, Morera's series, residue
O1YFKO Find the course starts from outling of a complex function and the orem, roots of a holomoutheorem.  O2YFYS1 Power and the complex function and the orem.  O2YFYS1 Power and the complex forms and the complex function and the complex forms and the complex function and the course func	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper understare chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1	with respect to a e, Liouville's theoretanding of fundan	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theores, Laurent  Z ented in the	I: the derivative orem, Morera's series, residue
O1YFKO Find the course starts from outling of a complex function and the theorem, roots of a holomout theorem.  O2YFYS1 Pind the seminar is devoted to a Mechanics. The problems a complex function of the complex forms and the complex forms and the complex forms are introduced to the complex forms.	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.	with respect to a e, Liouville's theoretanding of fundan	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theres, Laurent  Z ented in the s. Z	I: the derivative orem, Morera's series, residue 2 course of
O1YFKO Find the course starts from outling of a complex function and the theorem, roots of a holomoutheorem.  O2YFYS1 Pind the seminar is devoted to a Mechanics. The problems a complex function of the complex forms are introduced to the complex forms.	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course. ssentials of High School Math Course 2	with respect to a e, Liouville's theoretanding of fundan	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theores, Laurent  Z ented in the	I: the derivative orem, Morera's series, residue 2 course of
O1YFKO Find the course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Polymer is devoted to a Mechanics. The problems are completed to the course of the c	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  ssentials of High School Math Course 2 shool mathematics.	with respect to a e, Liouville's theoretanding of fundan	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theres, Laurent  Z ented in the s.  Z Z	I: the derivative orem, Morera's series, residue 2 course of 1
O1YFKO Find the course starts from outling of a complex function and to theorem, roots of a holomout theorem.  O2YFYS1 Pind the seminar is devoted to a Mechanics. The problems at 00YMAM1 Eight students are introduced to 00MAM2 Eight seview of basics of high scoops.	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course. ssentials of High School Math Course 2	with respect to a e, Liouville's theoretanding of fundan	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theres, Laurent  Z ented in the s. Z	I: the derivative orem, Morera's series, residue 2 course of
O1YFKO Final Properties of the course starts from outling of a complex function and the orem, roots of a holomout theorem.  O2YFYS1 Properties of the problems of the course starts from outling of the course of th	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rphic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course. seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2	with respect to a e, Liouville's theore standing of fundan e PC and physica	closed curverem, the Cau	ole are explai e, Cauchy's uchy estimat hysics prese	ned in detail integral theres, Laurent  Z ented in the s.  Z Z	I: the derivative orem, Morera's series, residue 2 course of 1
O1YFKO Final Properties of the course starts from outling of a complex function and the theorem, roots of a holomout theorem.  O2YFYS1 Properties and the seminar is devoted to the development of the seminar is devoted to the seminar in the seminar	unctions of Complex Variable  ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rphic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1  detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1  mathematical concepts and methods used in the introductory physics course.  ssentials of High School Math Course 2  chool mathematics.  imulations and Data Analysis Tools 1  ons of high energy elementary particle collisions. ROOT and Pythia programs.	with respect to a e, Liouville's theore standing of fundan e PC and physica	closed curverem, the Cau	e, Cauchy's uchy estimat hysics prese equipments	ned in detail integral theres, Laurent  Z	I: the derivative orem, Morera's series, residue 2 course of 1
O1YFKO Final Properties of the course starts from outling of a complex function and the theorem, roots of a holomout theorem.  O2YFYS1 Properties of the seminar is devoted to develope the seminar is devoted to devote the seminar is devoted to d	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rphic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course. seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a	with respect to a e, Liouville's theoret tanding of fundante PC and physical reviewed.	closed curvinem, the Cau	e, Cauchy's uchy estimat hysics prese equipments	ned in detail integral theres, Laurent  Z conted in the state of the s	I: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5
O1YFKO Final Properties of the course starts from outling of a complex function and theorem, roots of a holomout theorem.  O2YFYS1 Properties of the seminar is devoted to develope the seminar is devoted to devote the seminar is devoted to dev	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.	with respect to a e, Liouville's theoret tanding of fundante PC and physical reviewed.	closed curvinem, the Cau	e, Cauchy's uchy estimat hysics prese equipments	ned in detail integral theres, Laurent  Z ented in the state of the st	I: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 e learning
O1YFKO Final Control of the course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Pinal Control of the seminar is devoted to one of the seminar is devoted	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks. umerical Methods 2	with respect to a e, Liouville's theoretanding of fundance PC and physical reviewed.	closed curvinem, the Cau	e, Cauchy's uchy estimat hysics prese equipments	ned in detail integral there is, Laurent  Z ented in the is.  Z Z Z Z KZ	I: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2
O1YFKO Final Properties of the course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Properties of the seminar is devoted to only Mamala Properties of the seminar is devoted to only	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1 ural Networks 1 is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks. umerical Methods 2 umerical solution of boundary-value problems and intial-boundary-value problems for ordin	with respect to a e, Liouville's theoretanding of fundance PC and physical reviewed.	closed curvinem, the Cau	e, Cauchy's uchy estimat hysics prese equipments  nd other rela uations. It ex	ned in detail integral there is, Laurent  Z ented in the is.  Z Z Z Z KZ	I: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2
O1YFKO The course starts from outli of a complex function and theorem, roots of a holomortheorem.  O2YFYS1 The seminar is devoted to Mechanics. The problems a O0YMAM1 Students are introduced to O0MAM2 Review of basics of high scool of the course is devoted to Mechanics. The problems and the course is devoted to O1YNME2 The course is devoted to nuboundary-value problems to to one of the course is devoted to nuboundary-value problems to the course is devoted to nuboundary-value	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1 ural Networks 1 ural Networks 1 is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 imerical solution of boundary-value problems and intial-boundary-value problems for ordino initial-value problems and finite-difference methods for elliptic, parabolic and first-orde	with respect to a e, Liouville's theoretanding of fundance PC and physical reviewed.	closed curvinem, the Cau	e, Cauchy's uchy estimat hysics prese equipments  nd other rela uations. It ex	ned in detail integral there is, Laurent  Z ented in the is.  Z Z Z Z KZ Atted machin	I: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2 ods converting
O1YFKO Filter the course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Pilter the seminar is devoted to one of the semin	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1 ural Networks 1 is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks. umerical Methods 2 umerical solution of boundary-value problems and intial-boundary-value problems for ordin	with respect to a e, Liouville's theoret tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directions of the part	closed curvinem, the Cau mentals of pl al laboratory  r learning, a  fferential eq al differential	nd other relauations. It exuations.	ned in detail integral theores, Laurent  Z ented in the s.  Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	t: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2 ods converting 3
O1YFKO Final The course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Pinal The seminar is devoted to only Mamala simulation of the course is devoted to only Mamala	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  Sesentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 merical solution of boundary-value problems and intial-boundary-value problems for ordino initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist	with respect to a e, Liouville's theoret tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directions of the part	closed curvinem, the Cau mentals of pl al laboratory  r learning, a  fferential eq al differential	nd other relauations. It exactical use a	ned in detail integral theores, Laurent  Z ented in the state of the s	t: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2 ods converting 3 d by examples
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to only Mamala simulation of the course of high scropes o	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 merical solution of boundary-value problems and initial-boundary-value problems for ordino initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist eneral Chemistry 2	with respect to a e, Liouville's theore tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial dir hyperbolic partial try I. Their significative in the control of the cont	closed curvinem, the Cau mentals of pl al laboratory  r learning, a  fferential eq al differential ance and pr	nd other relauations. It exactical use a	ned in detail integral theores, Laurent  Z ented in the state of the s	t: the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2 ods converting 3 d by examples 3
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to one of the seminar is devoted	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point riphic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics.  imulations and Data Analysis Tools 1 cons of high energy elementary particle collisions. ROOT and Pythia programs.  imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1  ural Networks 1  ural Networks 1  ural Networks 1  ural Networks 2  umerical Solution of boundary-value problems and intial-boundary-value problems for ording initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1  ots, quantities and units used in chemistry are introduced in the course General Chemist eneral Chemistry 2  tion of the course General chemistry I. The main attention is paid to general principles g	with respect to a e, Liouville's theoret tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial dir hyperbolic partial try I. Their significatory chemical coverning chemical etc.	closed curvinem, the Cau mentals of pl al laboratory  r learning, a  fferential eq al differential ance and pr	nd other relauations. It exactical use a	ned in detail integral theores, Laurent  Z ented in the state of the s	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2 ods converting 3 d by examples 3 ses, the fact that
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to one of the seminar is devoted	unctions of Complex Variable ning the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  seentials of High School Math Course 2 chool mathematics. imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs. imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 merical solution of boundary-value problems and initial-boundary-value problems for ordino initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist eneral Chemistry 2	with respect to a e, Liouville's theoret tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial dir hyperbolic partial try I. Their significatory chemical coverning chemical etc.	closed curvinem, the Cau mentals of pl al laboratory  r learning, a  fferential eq al differential ance and pr	nd other relauations. It exactical use a	ned in detail integral theores, Laurent  Z ented in the state of the s	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 5 se learning 2 ods converting 3 d by examples 3 ses, the fact that
O1YFKO Final Control of the course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Pinal Control of the seminar is devoted to one of the course is	unctions of Complex Variable Ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle thysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  Seentials of High School Math Course 2 chool mathematics.  Imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs.  Imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1 ural Networks 1* is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 imerical solution of boundary-value problems and intial-boundary-value problems for ording in initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist eneral Chemistry 2 tion of the course General chemistry I. The main attention is paid to general principles gles is not restricted only to chemical processes is documented. The significance and practical solution of the course General chemistry I. The main attention is paid to general principles gles is not restricted only to chemical processes is documented. The significance and practical solutions.	with respect to a e, Liouville's theoret tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial dir hyperbolic partial try I. Their significatory chemical coverning chemical etc.	closed curvinem, the Cau mentals of pl al laboratory  r learning, a  fferential eq al differential ance and pr	nd other relauations. It exactical use a Z S. Using varie only is a zero illustrated as a zero illustrated as a zero illustrated as a zero illustrated as zero illustr	ned in detail integral theores, Laurent  Z ented in the state of the s	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 2 see learning 2 ods converting 3 d by examples solved amples solved
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to one of the seminar is devoted	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle thysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  ssentials of High School Math Course 2 chool mathematics.  imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs.  imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1 ural Networks 1 ural Networks 1 is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 umerical Solution of boundary-value problems and intial-boundary-value problems for ording initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist eneral Chemistry 2 tion of the course General chemistry I. The main attention is paid to general principles gles is not restricted only to chemical processes is documented. The significance and prarobability and Statistics	with respect to a e, Liouville's theoret tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directory I. Their significatory I. Their significatory use of explaints and the significance of explaints and the sig	closed curvinem, the Cau mentals of pi al laboratory  r learning, a  fferential equal differential ance and principal processes ained principal	nd other relauations. It exactical use a Z Z Using variables are illus	ned in detail integral theores, Laurent  Z ented in the size of th	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 2 see learning 2 ods converting 3 d by examples solved 4
O1YFKO Filter Course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to one of the seminar is devot	unctions of Complex Variable Ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle thysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  Seentials of High School Math Course 2 chool mathematics.  Imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs.  Imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1 ural Networks 1* is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 imerical solution of boundary-value problems and intial-boundary-value problems for ording in initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist eneral Chemistry 2 tion of the course General chemistry I. The main attention is paid to general principles gles is not restricted only to chemical processes is documented. The significance and practical solution of the course General chemistry I. The main attention is paid to general principles gles is not restricted only to chemical processes is documented. The significance and practical solutions.	with respect to a e, Liouville's theore tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directory I. Their significatory I. Their significatory is explained use of explaining with the class	closed curvinem, the Cau mentals of pi al laboratory  r learning, a  fferential equal differential ance and pri al processes ained princip	nd other relauations. It exactical use a Z Z Using variables are illus and continuation are exactical use a Z Z and and continuation are explained as a continuation and continuation and continuation are explained as a continuation and continuation and continuation are explained as a continuation and continuation and continuation are explained as a continuation and continuation and continuation and continuation and continuation are explained as a continuation and continuation an	ned in detail integral theores, Laurent  Z ented in the size of th	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 2 see learning 2 ods converting 3 d by examples amples solved 4 Kolmogorov
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to one of the seminar is devoted	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of che Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point rephic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to use seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  ssentials of High School Math Course 2 shool mathematics.  imulations and Data Analysis Tools 1 ons of high energy elementary particle collisions. ROOT and Pythia programs.  imulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1 ural Networks 1" is to acquaint students with basic models of artificial neural networks, a each students how to apply these models and methods to solve practical tasks.  umerical Methods 2 merical Solution of boundary-value problems and intial-boundary-value problems for ordino initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1 ots, quantities and units used in chemistry are introduced in the course General Chemist  eneral Chemistry 2 tion of the course General chemistry I. The main attention is paid to general principles gles is not restricted only to chemical processes is documented. The significance and practobability and Statistics ability theory and mathematical statistics. The probability theory is build gradually beginn	with respect to a e, Liouville's theore tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directory I. Their significatory I. Their significatory is a citical use of explaining with the class ariable are treated.	closed curvinem, the Cau mentals of pi al laboratory  r learning, a  fferential equal differential ance and pri al processes ained princip	nd other related are all use a recipion of the control of the cont	ned in detail integral theores, Laurent  Z ented in the size of th	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 2 5 se learning 2 ods converting 3 d by examples solved 4 Kolmogorov
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to the Mechanics. The problems are introduced to the Mechanics. The goal is to the Mechanics are introduced to the Mech	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of of the Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point riphic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us assentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  In mathematical concepts and methods used in the introductory physics course.  In mathematical concepts and methods used in the introductory physics course.  In mathematics of High School Math Course 2  In mathematics of High School Math Course Course of Pythia programs. In mathematics of Pythia programs of Pythia programs. In mathematics of In	with respect to a e, Liouville's theore tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directory I. Their significatory I. Their significatory is a citical use of explaining with the class ariable are treated.	closed curvinem, the Cau mentals of pi al laboratory  r learning, a  fferential equal differential ance and pri al processes ained princip	nd other related are all use a recipion of the control of the cont	ned in detail integral theores, Laurent  Z ented in the size of th	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 2 5 se learning 2 ods converting 3 d by examples solved 4 Kolmogorov
O1YFKO Fine course starts from outling of a complex function and theorem, roots of a holomoutheorem.  O2YFYS1 Phe seminar is devoted to the Mechanics. The problems are introduced to the Mechanics. The most important concepts of the Mechanics are introduced to the Mechanics are introduced to the Mechanics are introduced to the Mechanics. The goal is to the Mechanic are introduced to the Mechanics and Mechanics are introduced to the Mechanics	unctions of Complex Variable ining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of of the Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point riphic function, analytic continuation, isolated singularities, the maximum modulus principle hysical Seminar 1 detailed study of interesting physical problems. It should help students to deeper unders are chosen, studied and presented by the students themselves, with the possibility to us seentials of High School Course 1 mathematical concepts and methods used in the introductory physics course.  Sesentials of High School Math Course 2 chool mathematics.  Sesentials of High School Math Course 2 chool mathematics.  Simulations and Data Analysis Tools 1 cons of high energy elementary particle collisions. ROOT and Pythia programs.  Simulations and Data Analysis Tools 2 implementation and testing of a program for generating of particle collision. Results are eural Networks 1  Sural Methods 2  Sumerical Solution of boundary-value problems and intial-boundary-value problems for ording initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 1  Solution of boundary-value problems and intial-boundary-value problems for ording initial-value problems and initial-value problems and initial-value problems and finite-difference methods for elliptic, parabolic and first-orde eneral Chemistry 2  Stenor the course General chemistry 1. The main attention is paid to general principles get les is not restricted only to chemical processes is documented. The significance and prace of the course General chemistry is not restricted only to chemical processes is documented. The significance and prace of the basic methods of mathematical statistics. The probability theory is build gradually beging and on variable, distribution function of random variable and characteristics of random variable and characterist	with respect to a e, Liouville's theore tanding of fundance PC and physical reviewed.  Ilgorithms for their mary and partial directory I. Their significatory I. Their significatory is a citical use of explaining with the class ariable are treated.	closed curvinem, the Cau mentals of pi al laboratory  r learning, a  fferential equal differential ance and pri al processes ained princip	nd other relauations. It exactical use a succession of the control	ned in detai integral theores, Laurent  Z ented in the s.  Z  Z  Z  Z  KZ  Z  KZ  atted machin  KZ  cplains meth  Z  are illustrated  Z,ZK  pus example trated by ex  Z,ZK  nuing till the ns are state	the derivative orem, Morera's series, residue 2 course of 1 1 2 2 see learning 2 ods converting 3 d by examples 3 es, the fact that amples solved 4 Kolmogorov d and proved.

02YROZ1	Seminar on Quark-Gluon Plasma 1	Z	2
The aim of the seminar	is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparir	ng the presentation	n about selected
papers.			
02YROZ2	Seminar on Quark-Gluon Plasma 2	Z	2
	is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparir	ng the presentation	n about selected
papers.			_
02YSTR	Special Theory of Relativity	ZK	2
	nowledge of classical, non-quantum mechanics of the special theory of relativity fundamentals.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TV-3	Physical education	Z	1
TV-4	Physical education	Z	1
02YUFEC	Introduction to Elementary Particle Physics	Z	2
The course provides ar	easily accessible introduction to elementary particle physics. Development, methods, goals and perspectives of the subject	are presented.	
17YUING	Introduction to Engineering	KZ	3
	troduction to engineering skills. Students should gain general engineering skills at basic level (e.g. material properties and be	ehavior, basics of r	manufacturing
	assurance, environmental impacts,). In addition, the introduction to scientific work and technical drawing will be included.	, ,	
02UKP1	Introduction to Curves and Surfaces	Z	2
_	is an introduction to the differential geometry of simple manifolds - curves and two-dimensional surfaces. The basic concepts		
	plained. In the surface theory we introduce first and second fundamental forms and mean and Gaussian curvature. Essential p	art of the lecture a	ire the examples
calculated by students.	Introduction to Company and Conference O	7	
02UKP2	Introduction to Curves and Surfaces 2 course 02UKP1. The properties of the first fundamental form are briefly summarized. The concept of the second fundament	Z	2
	n curvature. Finally, the usual concepts of Riemann geometry are introduced.	ai ioiiii is iiilioduc	ed, leading to
02YUKT	Introduction to Quantum Theory	Z	2
	s to introduce the basic principles of quantum theory and its interpretation on simple examples.		2
01UP1	Introduction to Probability 1	Z,ZK	3
	te set of possible results, classical probability, independent random events 2.Probability and combinatorics 3.Probability and		-
	y, Bayes theorem, medical diagnosis, Simpsons paradox 5.Random variable with discrete state space, its distribution and me	-	•
	ue 7.Probabilistic method in graph theory 8.Random algorithms, Morris algorithm and its variants		
01UP2	Introduction to Probability 2	Z,ZK	3
1. One-dimensional cor	ntinuous random variable and its statistical description. 2. Distribution function and probability density. 3. Axiomatic introductio	n of probability an	d connection to
measure theory. 4. Nun	nerical characteristics of continuous random variables. 5. Selected variants of continuous distributions and their characteristic	s. 6. Elementary m	nethods for point
estimations. 7. Generat	ing pseudorandom numbers from the selected distribution.		
12YUNXAP	Introduction to UNIX	Z	2
	g systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfa		
	systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working	•	
	shell) bash and its programming (scripts). Controlling processes, process status, computer load a process priorities. Standard networks. Local computer networks. Global computer networks. Addresses and protocols TCP/IP. Network configutation of a c	-	
	scp, etc. Network applications	omputer. rectwork	COCIVIOCO.
12YVKT	Vacuum Technology	KZ	4
	concepts and relations; diffusion,flow of rarefied gases. Flow and current of gas, conductivity. Interaction of gas with solid sur	1	
_	matter; evaporation, condensation; Vacuum generation: Pumping proces, Ultimative pressure, Pumping speedPumps and their	•	1
pumps: Diaphragm, Slic	ding vane rotary, Diffusion, Molecular, Roots, Molecular and Turbomolecular pumps. Sorption pumps: Cryopumps, Cryo-Adso	rption pumps, Sul	olimation and
NEG pumps, Ion getter	$pumps Vacuum\ measurements: vacuum\ gauges\ of\ total\ and\ partial\ pressure; pumping\ speed; gas\ flow,\ search\ for\ leaks.\ Mathematical pressure in the pumping speed of\ pumping\ speed of\ pumpi$	aterials and vacuu	m components
and seals.Practical exe	rcises.		
12YPYTH	Scientific Programming in Python	Z	2
	s to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is p		
·	s performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or study		
	earch. In the introductory part of the course, students learn the basic features of Python?from basic types to object oriented one focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciF		
1 -	generate efficient code, how to combine Python with other languages, what tools are available.	y and the Matplot	iib grapriics
12VTV	Scientific and Technical Computing	Z	2
	ar with methods of solving of computational problems in the scientific and technical practice, and with methods of their progra	1 1	
_	in the Fortran language.	arming. The court	o lo orionida
18YZALG	Basics of Algorithmization	Z,ZK	4
	to selected algorithms and methods for algorithm design. This course intruduces selected methods for the determination of the		
17YZEL	Basics of Electronics	KZ	3
	information of electronics. In the beginning, lectures are devoted to passive components - resistors, capacitors, inductors and		-
	al with semiconductor components (standard, Zener, capacitive, LED), bipolar, unipolar transistors and semiconductor components		
	ntinue with general amplifiers and operational amplifiers. Finally, lectures deal with digital circuits, digital/analog and analog/o		
completed with electron	nic laboratory exercises.		
02ZSM	Introduction to the Standard Model	ZK	2
l <b>a</b>	ons, baryons, mesons, symmetry, symmetry group, quarks, gluons, partons, standard model of electroweak and strong intera	actions quantum c	hromodynamics

Code of the group: BSPJAZYKYZAP Name of the group: BS P jazyky zap Requirement credits in the group: Requirement courses in the group:

(QCD), cross section, scattering cross section.

# 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
04XAM1	English for Intermediate Students M1  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XAM2	English for Intermediate Students M2  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	L	V
04XAM3	English for Intermediate Students M3  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XAP1	English for Advanced Students P1  Jana Ková ová Darren Copeland (Gar.)	Z	2	0+2	Z	٧
04XAP2	English for Advanced Students P2  Jana Ková ová Darren Copeland (Gar.)	Z	2	0+2	L	V
04XAP3	English for Advanced Students P3  Jana Ková ová Darren Copeland (Gar.)	Z	2	0+2	Z	V
04XCESZ1	Czech for Foreigners - Beginners 1  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XCESZ2	Czech for Foreigners - Beginners 2  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	L	V
04XCESZ3	Czech for Foreigners - Beginners 3  Jana Ková ová Jana Ková ová (Gar.)	Z	2	2S	Z	V
04XCESM1	Czech for Foreigners - Intermediate 1  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XCESM2	Czech for Foreigners - Intermediate 2  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	L	V
04XCESM3	Czech for Foreigners - Intermediate 3  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XCESP1	Czech for Foreign Students - Advanced 1  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XCESP2	Czech for Foreigners - Advanced 2  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	L	V
04XCESP3	Czech for Foreigners - Advanced 3  Jana Ková ová Jana Ková ová (Gar.)	Z	2	0+2	Z	V
04XFM1	French for Intermediate Students M1  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+2	Z	V
04XFM2	French for Intermediate Students M2  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+2	L	V
04XFM3	French for Intermediate Students M3  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+2	Z	V
04XFP1	French for Advanced Students P1  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+2	Z	V
04XFP2	French for Advanced Students P2  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+2	L	V
04XFP3	French for Advanded Students P3  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+2	Z	V
04XFZ1	French for Beginners Z1  V ra Šlechtová V ra Šlechtová (Gar.)	Z	2	0+4	L	V
04XFZ2	French for Beginners Z2	Z	2	0+4	Z	V
04XFZ3	V ra Šlechtová V ra Šlechtová (Gar.)  French for Beginners Z3	Z	2	0+4	L	V
 04XFZ4	V ra Šlechtová V ra Šlechtová (Gar.) French for Beginners Z4	Z	2	0+4	Z	V
04XFZ5	V ra Šlechtová V ra Šlechtová (Gar.) French for Beginners Z5	Z	2	0+4	L	V
04XNM2	V ra Šlechtová V ra Šlechtová (Gar.)  German for Intermediate Students M2	Z	2	0+2	L	V
04XNM1	Miloslava echová Miloslava echová (Gar.)  German for Intermediate Students M1	Z	2	0+2	Z	V
04XNM3	Miloslava echová Miloslava echová (Gar.)  German for Intermediate Students M3	Z	2	0+2	Z	V
04XNP1	Miloslava echová Miloslava echová (Gar.)  German for Advanced Students P1	Z	2	0+2	Z	V
04XNP2	Miloslava echová Miloslava echová (Gar.)  German for Advanced Students P2	Z	2	0+2	L	
04XNP3	Miloslava echová Miloslava echová (Gar.)  German for Advanced Students P3	Z	2	0+2	Z	
04XRM1	Miloslava echová Miloslava echová (Gar.)  Russian for Intermediate Students M1	Z	2	0+2	Z	
04XRM2	Zhanna Isaeva Zhanna Isaeva (Gar.)  Russian for Intermediate Students M2	Z	2	0+2	L	

04XRM3	Russian for Intermediate Students M3 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+2	Z	V
04XRP1	Russian for Advanced Students P1 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+2	Z	V
04XRP2	Russian for Advanced Students P2 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+2	L	٧
04XRP3	Russian for Advanced Students P3 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+2	Z	V
04XRZ1	Russian for Beginners Z1 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+4	L	V
04XRZ2	Russian for Beginners Z2 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+4	Z	٧
04XRZ3	Russian for Beginners Z3 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+4	L	٧
04XRZ4	Russian for Beginners Z4 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+4	Z	V
04XRZ5	Russian for Beginners Z5 Zhanna Isaeva Zhanna Isaeva (Gar.)	Z	2	0+4	L	V
04XSM1	Spanish for Intermediate Students M1 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+2	Z	V
04XSM2	Spanish for Intermediate Students M3 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+2	L	V
04XSM3	Spanish for Intermediate Students M3 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+2	Z	V
04XSP1	Spanish for Advanced Students P1 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+2	Z	٧
04XSP2	Spanish for Advanced Students P2 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+2	L	٧
04XSP3	Spanish for Advanced Students P3 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+2	Z	٧
04XSZ1	Spanish for Beginners Z1 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	L	V
04XSZ2	Spanish for Beginners Students Z2 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	Z	V
04XSZ3	Spanish for Beginners Z3  Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	L	V
04XSZ4	Spanish for Beginners Z4 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	Z	V
04XSZ5	Spanish for Beginners Z5  Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	L	V
Characteristics of the	courses of this group of Study Plan: Code=BSPJAZYKYZ	AP Name=BS P i	azyky za	р		
	glish for Intermediate Students M1	•		_	Z	2
	students who have successfully completed the full secondary school English lang	uage course at least at	the A2 level	l of the Comi	non Europea	n Framework
	(CCCD) It provides an introduction into English for Specific and Academic Dura					

	Beatriz Vadilio Gorizalo Beatriz Vadilio Gorizalo (Gar.)					1
04XSZ3	Spanish for Beginners Z3 Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	L	V
04XSZ4	Spanish for Beginners Z4  Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	Z	V
04XSZ5	Spanish for Beginners Z5  Beatriz Vadillo Gonzalo Beatriz Vadillo Gonzalo (Gar.)	Z	2	0+4	L	V
Characteristics of	the courses of this group of Study Plan: Code=BSPJAZYKYZAP	Name=BS P j	azyky zap			
04XAM1	English for Intermediate Students M1				Z	2
The course is designed f	or students who have successfully completed the full secondary school English language	course at least at	the A2 level of	the Com	mon Euro	bean Framework
of Reference for Langua	ges (CEFR). It provides an introduction into English for Specific and Academic Purposes	(ESP, EAP), i.e., ir	nto fundamenta	Is of voc	abulary an	d style typical of
professional oral and wri	tten communication situations. Thus it covers topics related to the student's life and need	s as well as topics	of subtechnica	l interes	t. Attention	is also paid to
extending the knowledge	of grammar issues used in EAP.					
04XAM2	English for Intermediate Students M2				Z	2
The AM2 course expects	the student to have completed the AM1 course. It develops their skills for work with subto	echnical texts, foci	using also more	on spec	cific gramn	nar, functions,
and lexical items typical of	f ESP and EAP (e.g., definition, existence and classification of phenomena, object descrip	tions). Part of the o	ourse is also gu	ıided wri	ting. If nec	essary, grammar
revision is included.						
04XAM3	English for Intermediate Students M3				Z	2
The course develops the	skills that enable students to cope with features typical of professional style. Increasing atte	ention is paid to de	veloping subted	hnical v	ocabulary a	and independent
understanding of profess	ional texts. Great emphasis is placed on distinguishing different levels of formal and infor	mal oral and writte	n communicati	on and th	neir approp	oriate Czech
equivalents. The course a	also includes studying abstracts and rules for writing them as well as basic rules for prepa	aring and giving a	short presentat	ion on a	chosen to	pic related to the
student's field.						
04XAP1	English for Advanced Students P1				Z	2
The course is designed f	or students who have successfully completed the full secondary school English language	course (at least the	ne B1 level of the	ne Comn	non Europ	ean Framework
of Reference for Langua	ges - CEFR). It provides an introduction into English for Specific and Academic Purposes	(ESP, EAP), i.e., i	nto the fundam	entals of	vocabula	ry, functions,
grammar, and style typic	al of professional oral and written communication situations (fundamentals of terms in ma	athematics and phy	sics, definition	s, graph	description	ns, etc). It also
covers professional oral a	nd written communication on topics related to the undergraduate's life and needs. It develo	ps skills for free pr	ofessional writir	ng (writin	g a CV, lett	er of application,
polite request). If necess	ary, revision of selected grammar topics is included.					
04XAP2	English for Advanced Students P2				Z	2
The AP2 course is based	on AP1, thus extending the student's skills for working with subtechnical texts, and ever	n with professional	texts of choser	ı branch	es of scier	ice. According to
the students' needs it co	ncentrates on chosen grammar topics, but mainly intends to develop understanding of sy	ntactic structures	and typical rhet	orical fu	nctions (e.	g., various types
of descriptions, and, if po	essible, a case study). Increasing emphasis is placed on the undergraduate's independer	nt work with and re	ading of linguis	tically m	ore demar	nding materials.
The course extends the s	student's subtechnical vocabulary, and includes fundamental notions of chosen branches	of science. It is foo	cused on forma	I writing i	including t	he sentence and
paragraph structure, linki	ng, cohesion and coherence in texts.					
04XAP3	English for Advanced Students P3				Z	2

The AP3 course is based on AP2 and expects the student to work without any guidance with authentic professional materials and to interpret the text. It includes training oral and written communication skills and functions (e.g., expressing an opinion, agreement, and objections; taking part in discussion, note-taking; summarizing, writing an abstract) and, if possible, also preparing a project on a given or chosen topic and presenting it. The course places emphasis on distinguishing levels of formal and informal language both in oral and written communication.

04XCESZ1 Czech for Foreigners - Beginners 1	Z	2
The course is designed for students of the English programme. Students will become acquainted with the main characteristics of Czech (phonetic	=	
acquire basic language and speaking skills. The course focuses on pronunciation exercises, simple social phrases, and oral and written commun situations. The course covers roughly lessons 1-3 of estina Express (Czech Express) by L. Holá and P. Bo ilová.	cation in the most co	ommon everyday
04XCESZ2 Czech for Foreigners - Beginners 2	Z	2
The language and communication competences acquired in CESZ1 are further developed. Students deepen their knowledge of the declension a	nd conjugation syste	m and practise
basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  04XCESZ3	Z	2
The course further develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuse	_	I
fixing correct pronunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to p		-
frequent types of dialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers 1.	oughly lessons 5-7 i	n eština expres
04XCESM1 Czech for Foreigners - Intermediate 1	Z	2
The course is focused on correct pronunciation, important morphological phenomena, prepositional phrases, and verb forms as well as on extendin social situations.	g the student's vocal	oulary for various
04XCESM2 Czech for Foreigners - Intermediate 2	Z	2
The course develops the topics covered in CESM1 and is then focused on more difficult grammar phenomena. It practices writing, speaking, and	_	1
in understanding common abbreviations, abbreviated words, and mathematical terms and formulas.		
04XCESM3 Czech for Foreigners - Intermediate 3	Z	2
The last course revises morphological topics covered earlier and extends the student's knowledge of more difficult language phenomena. It is es	pecially focused on s	stylistics and
lexicology and on developing the student's writing skills.	7	
04XCESP1	Z	2
The prerequisite of the course is very good knowledge of the Czech language, i.e., communicative competences at least at level B2 of the Commo It is focused partly on revision of standard language structures, but mainly on practising more complex grammatical structures typical of the style		
basics of functional style of engineering and professional communication, both in spoken and written form. The topics include University Studies		=
includes communication with teachers and faculty administrators.		,
04XCESP2 Czech for Foreigners - Advanced 2	Z	2
This course extends the student's knowledge acquired in CESP1 and focuses on difficult language phenomena. It practises working with technic	al and specialist text	s placing greater
emphasis on individual work.		
04XCESP3 Czech for Foreigners - Advanced 3	Z	2
The course develops the student's knowledge from CESP2. It includes working with authentic specialist materials, their interpretation and present	tation, and, finally, pr	esentation of the
student's project. Writing skills necessary for professional communication are trained.	Z	2
04XFM1   French for Intermediate Students M1 French - intermediate FM The objective of this three-semester course is to improve and further develop communication in the French language in	-	_
will be able to communicate in social interaction and in academic, scientific and professional environment. They will be able to use the language in		
information and to solve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises		
skills gained in previous study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV,	personal statement,	request, answer
to an advert, French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, w	ork based on these	
04XFM2 French for Intermediate Students M2	Z	2
Course FM2 builds on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science as a significant figure of the control of t		
and scientific language (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French scientists, artists and architects. Description of an object, device, shapes, dimensions, material.	science and technol	ogy, French
04XFM3 French for Intermediate Students M3	7	2
The course is focused on improvement and further development of linguistic competence acquired during the follow-up courses. Syntactic structure	es (subordinate and	Į.
participle structures, compound tenses). Text summaryStudents prepare a written paper which will be delivered in form of an oral presentation is	•	
field of students' future specialisation or to their interest and generally covers a technical /applied science topic. It is not a translation but a creative	e work compiled fror	n French articles
and one's own knowledge/experienceLonger monologues on topics /situations set for the examination are prepared. Text structure, cohesion a		
04XFP1 French for Advanced Students P1	Z	2
FP advanced course The objective of this three-semester course is to improve and further develop communication in the French language in both		
be able to communicate in social interaction and in academic, scientific and work environment. They will be able to use the language to transmit to solve problems. FP1 The course builds on and further develops linguistic competence acquired at secondary school. Difficult grammar topics are		
passé composé-imparfait, pronouns. The following specific topics are covered: University studies in our country and in France, writing of transact		•
request, answer to an advert, environmental issues, success of French science and technology, chosen topics from French regional culture, Paris.	Topics of specialization	on: mathematics,
internet, physics, chemistry. Reading of technical and popular science texts, further work with these texts and interpretation.		
04XFP2 French for Advanced Students P2	Z	2
With the link to P1 contents, the course further develops language skills. Focus is put on reading popular science texts and on oral communication	n on given topics. Fe	eatures typical of
technical and scientific communication are stressed (passive voice, nominalization, word formation).	7	
04XFP3   French for Advanded Students P3 The course is focused on systemization and improvement of acquired linguistic competence, skills and knowledge, and their use for communication	Z	2
skill - translation of shorter texts (both from and into the language). Writing of a paper and making oral presentation in-class. The paper generally		=
topic. It is a creative work compiled from 3 French sources. Preparation of several set topics for oral examination.		
04XFZ1 French for Beginners Z1	Z	2
French for beginners The objective of this 5-level course is to be able to communicate in French orally and in writing in situations of everyday life,	in socializing and in	professional life.
The course includes French for specific / technical communication and reading of popular science and scientific texts. FZ1 The objective is to be		
level, actively using the knowledge of chosen elementary language. The contents is roughly outlined by lessons 1 - 7 of the textbook Pravda - Pra		•
(Francouzština pro za áte ky). It is extended with situations of communication and functions from the textbook Espaces I, lessons 1-4: introduction giving the directions, simple instructions and questions. Special attention is paid to pronunciation. Spelling is explained in connection with pronunciation.	· ·	_
04XFZ2 French for Beginners Z2	Z	2
The course is linking up with FZ1. Elementary linguistic knowledge and communication skills are expanded. The scope is given by lessons 8 - 13	1	I
French for Beginners . Additional topics and skills are filled in from the textbook Espaces I, lesson 1 - 5 (introductions, invitation, welcoming, agree		
thanking, travelling, map of France, food, expression of will, wish, order, prohibition, pleasure). Correct pronunciation is practiced. Stress on oral co	mmunication. Specifi	c topics covered:
How does the machine work? A few expressions concerning the study. Name of University and Faculty.		

04XFZ3	French for Beginners Z3	Z	2
	FZ2. Basic linguistic knowledge and skills are developed. The contents is given by lessons 14 - 18 of the textbook: Pravda - F tuations are complemented from other materials. Stress is put on oral communication in dialogues and on reading, both for in		•
•	Reading covers short adapted texts of general interest first, and later popular science texts.	ilormation and lou	u as part or
	French for Beginners Z4	Z	2
	FZ3. Basic linguistic knowledge and skills are further developed. Oral communication and reading skills are practiced. The communication and reading skills are practiced.	contents is roughly	covered with
	ktbook French for Beginners, and is expanded with topics and functions from other materials. Reading is developed from the lec		
	ourse covers generals and specific topics: health- illness, sport, free time, environment, study, travelling in France, Paris, sho now to write CV, application, topics in mathematics, reading physics - mechanics, informatics, internet.	pping, weather, ur	iversity in our
04XFZ5	French for Beginners Z5	Z	2
	FZ4 are further developed, as well as technical language. Students prepare a paper on a chosen popular science topic. The	I I	
•	ered by lessons 24 - 26 of the textbook: Pravda-Pravdova, French for Beginners, and is complemented from other materials.		
	h science and technology, information about France. Grammar is systemized and complemented with syntax (subordinate classics)	auses, typical con	unctions,
subjunctive clauses, ger			
04XNM2	German for Intermediate Students M2	Z	2
	ther more complex grammatical structures and their application in communication based on technical texts, such as the relation ng of the 21st century, linguistically more demanding texts on the environment, the language of mathematics, computers and		
<del>-</del>	mation and reading aloud, and appropriate language for various purposes in oral and written communication. The course system		
phenomena important for	or professional discourse (participles, relative clauses).		
04XNM1	German for Intermediate Students M1	Z	2
	rse is to level off the students' skills in the German language. The course focuses on revision of more difficult phenomena and		
•	es (e.g. importance of verb prefixes). In the lexical part, it covers topics referring to higher education in both the Czech Reput gether with all necessary expressions and phrases, expressions and phrases needed to chemists, mathematicians, physicist	•	
	communication on related topics and is aimed at correct pronunciation, grammatical correctness and understandability.		
04XNM3	German for Intermediate Students M3	Z	2
	ther more complex grammatical structures and their application in communication based on technical texts, such as the relation		
<del>-</del>	ng of the 21st century, linguistically more demanding texts on the environment, the language of mathematics, computers and		
•	mation and reading aloud, and appropriate language for various purposes in oral and written communication. The course systen or professional discourse (participles, relative clauses).	natically revises of	ner grammaticai
04XNP1	German for Advanced Students P1	Z	2
	od grammar knowledge, extended general vocabulary, and good communication skills acquired at secondary school to be le	_	
course. The course is th	en focused on working with technical and scientific texts and practising reading techniques (skimming, scanning, reading for	detail). It revises a	and develops
<del>-</del>	tructures necessary for understanding a subtechnical text (passive voice, participles, participle structures) and it also focuses on	practical everyday	communication,
i.e., telephoning. 04XNP2	German for Advanced Students P2	Z	2
	estudents' skills in working with professional scientific texts (understanding, summarising, note-taking, interpreting) while extend	·	
· · · · · · · · · · · · · · · · · · ·	oduces mathematical expressions and texts of nuclear power engineering. Increasing emphasis is placed on understanding and		
	V, letter of application, interview, scholarship), and more complex grammatical structures (i.e., subjunctive, indirect speech).		
04XNP3	German for Advanced Students P3	Z	2
	3 main parts (general communicative situations, grammar and technical topics). Students will develop their vocabulary in a var r accidents, accident report, filling in a form, complaints). Based on presentations and technical and subtechnical texts, the v	-	
	ing, the environment, computer science, and car technology, will also be extended. Only authentic professional texts are used		
	rocess information gained from their reading of complex and difficult texts and present it to the class in a simplified oral form. The		
practice to and from Ge			
04XRM1	Russian for Intermediate Students M1	Z	2
<del>-</del>	for students with previous knowledge of Russian from secondary schools. Students are supposed to know the Russian alphat nmunication in everyday situations (introductions, socializing, greetings, shopping for food and objects of everyday need, ask		
•	nmar structures (verbal and nominal forms, irregular verbs, pronouns). The initial knowledge corresponds to the achievement		
contents and scope of the	ne course correspond approximately to the RZ3 course, but for half of the time allotted in the timetable.		
04XRM2	Russian for Intermediate Students M2	Z	2
	the RM1 course, its contents and scope correspond roughly to RZ4, however, for half of the time allotted in the timetable.		
04XRM3	Russian for Intermediate Students M3 exhause Knowledge and skills acquired in RM1 and RM2 and its contents and scope are roughly at the same level as those of RZ5, high	Z	2
in the timetable.	e knowledge and skills acquired in Kivi i and Kiviz and its contents and scope are roughly at the same level as those of Kzs, in	owever, for riall of	ine time anotted
04XRP1	Russian for Advanced Students P1	Z	2
	ent for the course is to achieve the B1 CEFR level. The objective of the course is revision of standard language structures, pro		
	ng the fundamentals of technical language and training writing skills.		
04XRP2	Russian for Advanced Students P2	Z	2
	RP1. It expands grammatical structures important for understanding technical texts (verbal adjectives, participles, passives, ton independent oral and written communication.	verb aspects, spe	cific syntactic
04XRP3	Russian for Advanced Students P3	Z	2
	RP2 and is mainly focused on working with technical and scientific texts (reading comprehension, oral and written paraphras	·	
courses require good pr	evious knowledge of general language at secondary level (listening, reading, correct communication in everyday situations).	The courses deve	lop and expand
	dy is aimed at professional and technical skills (reading technical literature according to the students' specialization, oral and	· ·	
develop their subtechnic technical topics.	cal vocabulary and practice quick and correct communication in professional situations. They will be able to both speak write	accurately and wit	i confidence on
04XRZ1	Russian for Beginners Z1	Z	2
	he first stage of the five-semester programme, its final aim being reading and understanding professional texts written in Russ		
	or both reading and writing skills) and fundamentals of grammar necessary for everyday communication (listening and speak	ing). Students will	be able to read
a short text with marked	stress, understand its contents and summarize it.		

04XR72 Russian for Beginners Z2 The second semester of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subtechnical texts. Students will be able to communicate using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also develop their vocabulary and master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in writing. Russian for Beginners Z3 The course is based on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training various forms of reading skills and listening) and introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be able to respond so as to be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking. 04XRZ4 Russian for Beginners Z4 The course is based on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a certain percentage of unfamiliar words, oral communication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs, differences in verb patterns from Czech, modality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and practice oral and written communication on more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., Siberia), learn how to fill in forms, look up the information from the timetable, learn about Russian holidays and typical meals. 04XRZ5 Russian for Beginners Z5 Ζ 2 The course expects the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding, extracting and summarizing information from a specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication skills are trained on everyday topics. Studying grammar is based on professional and technical texts and only includes items typically used in professional communication (verbal adjectives, participles, passive voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, polite request, etc.) 04XSM1 Spanish for Intermediate Students M1 The course is designed for students whose competence is at level B1 of CEFR, i.e. those who studied Spanish in the secondary school. The 3-semester course develops standard vocabulary and pays attention to further grammar topics (e.g., perifrasis verbales, futuro imperfecto, direct object and indirect object pronouns, negative form of the imperative, and subjunctive), to written and oral communication on a given everyday or easy subtechnical topic, for which the students are trained by reading texts or listening to them. 04XSM2 Spanish for Intermediate Students M3 The course develops the students' knowledge from the previous course (SM1). Students are gradually acquainted with fundamentals of Spanish for specific purposes in order to be able to work with specialized texts on the Internet. 04XSM3 Spanish for Intermediate Students M3 The course books are supplemented with additional subtechnical materials, so the students will be gradually acquainted with the peculiarities of academic style. They will be competent enough to use the Internet in Spanish and search for information of their specialization or field of interest. Students will use the information to write short articles and summaries. The final part of the programme, general Spanish course based on course books, covers presentations and, finally, a written and oral examination. 04XSP1 Spanish for Advanced Students P1 Course concentrates on more difficult grammar topics, revision of vocabulary, basics of Spanish for specific purposes as well as written communication. Course prerequisites: level B2 of CEFR. 04XSP2 Spanish for Advanced Students P2 Course XSP2 is the second part of the advanced Spanish course, extending Spanish for specific purposes topics. It comprises more grammar and syntax and focuses on independent written communication 04XSP3 Spanish for Advanced Students P3 Course XSP3 is the final part of the advanced Spanish course. It is based on texts chosen by the students according to their future specialization. It is focused on written communication based on what students will need in their career. 04XSZ1 Spanish for Beginners Z1 Ζ 2 Course XSZ1 is the first stage of the five-semester programme of Spanish studies; during the first stage the students will master phonetics and fundamental grammar structures and will be able to communicate at an elementary level on topics of everyday life. They will acquire and extend fundamental vocabulary of general Spanish and will develop it. Spanish for Beginners Students Z2 Course XSZ2 is based on course XSZ1, and expects students to develop and extend the knowledge and skills acquired so far. Grammar structures and lexis will be chosen so as to enable them to understand short adapted written texts and speech. Attention is also paid to cultural differences between Spanish-speaking countries and others such as the Czech Republic. Realia of Spanish-speaking countries are also included. 04XSZ3 Ζ Spanish for Beginners Z3 2 This course builds upon the foundations established in course XSZ2 and further develops students vocabulary and grammatical competence. It includes an introduction to the realia and cultural context of Spanish-speaking countries, with a primary focus on Spain. Particular attention is given to key grammatical structures, including the pretérito perfecto, pretérito indefinido, pretérito imperfecto, the gerund, and the imperative. The course also focuses on both written and spoken communication on general topics. Students are prepared for this through targeted reading and listening activities. Spanish for Beginners Z4 The course is based on course XSZ3. It develops the student's vocabulary and extends the knowledge of the culture and social customs of the Spanish speaking countries, mainly of Spain. It pays attention to further grammar topics (perifrasis verbales, futuro imperfecto, direct object and indirect object pronouns, negative form of the imperative, and subjunctive), to written and oral communication on a given general or subtechnical topic, for which the student is trained by reading texts or listening to them. 04XSZ5 Spanish for Beginners Z5

7 The course books are supplemented with additional subtechnical materials, so the students will be gradually acquainted with peculiarities of Spanish for specific purposes. In its final

part, the general Spanish course based on the course book will end with a written and oral examination.

## List of courses of this pass:

Code	Name of the course	Completion	Credits
00MAM2	Essentials of High School Math Course 2	Z	1
,	Review of basics of high school mathematics.		
00YMAM1	Essentials of High School Course 1	Z	1
	Students are introduced to mathematical concepts and methods used in the introductory physics course.	•	

00YPT	Orientation Week	Z	2
The preparatory w	eek is intended for incoming bachelor's students. It includes an introduction to the organizational requirements of university studies a first semester.	nd introductory lect	tures for the
01RMFB	Equations of Mathematical Physics B	Z,ZK	5
The subject of this	course is solving integral equations, theory of generalized functions, classification of partial differential equations, theory of integral to partial differential equations.	ransformations, and	d solution of
01UP1	Introduction to Probability 1	Z,ZK	3
	vith finite set of possible results, classical probability, independent random events 2. Probability and combinatorics 3. Probability and g		
4.Conditional proba	ability, Bayes theorem, medical diagnosis, Simpsons paradox 5.Random variable with discrete state space, its distribution and mean calculation of mean value 7.Probabilistic method in graph theory 8.Random algorithms, Morris algorithm and its variants	value 6.Problems i	nvolving the
01UP2	Introduction to Probability 2	Z,ZK	3
	al continuous random variable and its statistical description. 2. Distribution function and probability density. 3. Axiomatic introduction o		
measure theory. 4.	Numerical characteristics of continuous random variables. 5. Selected variants of continuous distributions and their characteristics. 6 estimations. 7. Generating pseudorandom numbers from the selected distribution.	. Elementary metho	ods for point
01YANB3	Calculus B 3	Z,ZK	8
1. Functional sec	quences and series - convergence range, criteria of uniform convergence, continuity, limit, differentiation and integration of functional	series, power serie	es, Series
•	or's theorem. 2. Ordinary differential equations - equations of first order (method of integration factor, equation of Bernoulli, separation		-
-	equation) and equations of higher order (fundamental system, reduction of order, variation of parameters, equations with constant coe		-
	tial equation). 3. Metric spaces - metric, norm, scalar product, neighborhood, interior and exterior points, boundary point, isolated and	•	
	ss of space, Hilbert spaces. Orthogonal polynomials. Complete orthogonal systems. 4. Fourier series - expansion of functions into Fouri onvergence. 5. Differential calculus of functions of several variables - limit, continuity, partial and directional derivative, gradient, total o	=	
series and their co	Taylor series, elementary terms of vector analysis, Jacobi matrix. 6. Functions defined implicitly by one or several equation		gent plane,
01YANB4	Calculus B 4	Z.ZK	6
•	o et funkcí více prom nných a funkcionálních vektor . [2] Funkce zadané implicitn . [3] Taylorovy ady funkce více prom nných. [4] l	, , ,	
	kartézské soustavy sou adnic. [5] Lokální, vázané a globální extrémy funkce více prom nných. [6] Základy teorie míry a obrys konsti	•	
Integrální po et f	unkce více prom nných - Riemann v a Lebesgue v integrál, základní vlastnosti, Fubiniova v ta, v ta o substituci. Leviho a Lebesgu	eova v ta. Limita, s	spojitost a
	derivace integrálu podle parametru. [8] Integrály po k ivkách a plochách. Integrální v ty.		
01YFKO	Functions of Complex Variable	Z,ZK	3
	rom outlining the Jordan curve theorem and the Riemann-Stieltjes integral. Then basic results of complex analysis in one variable are ex	-	
•	on and the Cauchy-Riemann equations, holomorphic and analytic functions, the index of a point with respect to a closed curve, Cauch	-	
tneorem, roots of a	holomorphic function, analytic continuation, isolated singularities, the maximum modulus principle, Liouville's theorem, the Cauchy est theorem.	imates, Laurent ser	ries, residue
01YLAL	Linear Algebra 1	Z	2
1. Vector space. 2	Linear dependence and independence. 3. Basis and dimension. 4. Subspaces of vector spaces. 5. Linear mappings. 6. Matrices of l	inear mappings. 7.	Frobenius
•			Tropomae
·	theorem.		
01YLAL2		Z,ZK	4
01YLAL2 Outline: 1. Inver	theorem.  Linear Algebra 2	Z,ZK d quadratic forms.	4 5. Scalar
01YLAL2 Outline: 1. Inver	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonality.	Z,ZK d quadratic forms. ices. 2. Methods of	4 5. Scalar calculation
01YLAL2 Outline: 1. Inver product and orthog of determinants	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matromatical segments and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalical complements. 6. Geometry exercises and examples. 7. Adjoint operators.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or	4 5. Scalar calculation thogonal
01YLAL2 Outline: 1. Inver product and orthog of determinants	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matror. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or	4 5. Scalar calculation thogonal
01YLAL2 Outline: 1. Inver product and orthog of determinants	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matromatical segments and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalical complements. 6. Geometry exercises and examples. 7. Adjoint operators.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or	4 5. Scalar calculation thogonal
01YLAL2 Outline: 1. Inver product and orthog of determinants	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or	4 5. Scalar calculation thogonal
01YLAL2 Outline: 1. Inverproduct and orthogof determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalist complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute and series.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z  Z,ZK nd conditional conv	4 5. Scalar calculation thogonal  2 4 8 sergence 3.
01YLAL2 Outline: 1. Inverproduct and orthogof determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z  Z,ZK nd conditional conv	4 5. Scalar calculation thogonal  2 4 8 sergence 3.
01YLAL2 Outline: 1. Inverproduct and orthogof determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalist complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute appower series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integrations.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z  Z,ZK nd conditional conv rals: primitives, defi	4 5. Scalar calculation thogonal  2 4 8 sergence 3.
01YLAL2 Outline: 1. Inverproduct and orthogof determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalist complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an appropriate provents of integration of integrals, Generalized Riemann integral	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z  Z,ZK nd conditional conv rals: primitives, defi	4 5. Scalar calculation thogonal  2 4 8 rergence 3. nite integral
01YLAL2 Outline: 1. Inverproduct and orthogof determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMANZ 01YMANZ 01YMANZ 01YMANZ	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalist complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z  Z,ZK and conditional conv rals: primitives, defi	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral 4 2
01YLAL2 Outline: 1. Inverproduct and orthogof determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMANZ 01YMANZ 01YMANZ 01YMANZ	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrices. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalist complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and intial-boundary-value problems for ordinary and partial differential equations.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z  Z,ZK and conditional conv rals: primitives, defi	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral 4 2
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMANZ 01YMME2 The course is devo bound	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrical and eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalist complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial differential difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional conv rals: primitives, defir  XK L t explains methods rential equations. Z,ZK	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral 4 2 s converting 4
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian and gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrix. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalis complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute as power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integ (Riemann definition), techniques of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and finital-boundary-value problems for ordinary and partial differential equations. dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial differential equations are for probability and Statistics  et of probability theory and mathematical statistics. The probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, defir  XK It explains methods rential equations. Z,ZK continuing till the Kerorems are stated a	4 5. Scalar calculation thogonal  2 4 8 sergence 3. inite integral  4 2 s converting  4 follmogorov
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalis complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and intial-boundary-value problems for ordinary and partial differential equations. dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference are reposability and Statistics  et of probability theory and mathematical statistics. The probability theory is build gradually beginning with the classical definition and one as a random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the elassis of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testi	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 colmogorov and proved.
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initial-boundary-value problems for ordinary and partial differential equations. dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference of probability theory and mathematical statistics. The probability and Statistics  e of probability and Statistics  a of probability theory and mathematical statistics. The probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the e basis of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testing a characteristics.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 colmogorov and proved.
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integrations are represented in the propagation of integrals, Generalized Riemann integral Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the elassic of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testing the project is based on a topic appro	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 colmogorov and proved.
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The basic	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an opnality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonali complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an obver series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integ (Riemann definition), techniques of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and intial-boundary-value problems for ordinary and partial differential equations. dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference are probability theory and mathematical statistics. The probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the e basis of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testi Bachelor Project 1  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The basic	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integrations are represented in the propagation of integrals, Generalized Riemann integral Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the elassic of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testing the project is based on a topic appro	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The basic	theorem.  Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initial-boundary-value problems for ordinary and partial differential equations, dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference are probability theory and mathematical statistics. The probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the elbasic of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testi Bachelor Project 1  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Bachelor Project 2	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The basic	Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian and gonality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalis complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integrations, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference ons as arrowing and partial differential equations. Sarry-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference as a random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the basic of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testi Bachelor Project 1  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Bachelor Project 2  chelor project is based on a topic approved by the administrators o	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, definitives, definiti	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bounder of the course is devo for the course is devo bounder on the course of the c	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an opnality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalis complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute as power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integ (Riemann definition), techniques of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initia-boundary-value problems for ordinary and partial differential equations. dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods for elliptic, parabolic and first-order hyperbolic partial difference methods of mathematical statistics. The probability and Statistics  e of probability theory and mathematical statistics. The probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the e basis of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testification of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Bachelor Project 2	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, defi  XZ  It explains methods rential equations. Z,ZK continuing till the Keorems are stated and are explained. Z ded by the project select by the project select by the project select and are selected by the project selected by	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor  10 supervisor  2
01YLAL2 Outline: 1. Inver product and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The base	theorem.  Linear Algebra 2  se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an gonality, 6. Metric geometry, 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalis complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute as power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integ (Riemann definition), techniques of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initial-boundary-value problems for ordinary and partial differential equations. Jary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial difference as a random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the e basis of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testi  Bachelor Project 1  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Bachelor Project 2  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Simulations and Data Analy	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK and conditional converals: primitives, defi  XK It explains methods rential equations. Z,ZK continuing till the Keorems are stated and are explained. Z led by the project s  Z  Z  Z  Z  Z  Z  Z  Z	4 5. Scalar calculation thogonal  2 4 8 vergence 3. inite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound of the course is devo found on the course is descoursed finition. The notion of the course is descoursed finition. The balance of the course is descoursed finition. The second of the course is descoursed finition. The balance of the course is descoursed finition. The second of the course is descoursed finition. The second of the course is devoted by the course of the course is devoted by the course of the course is devoted by the course of the course	Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an ponality, 6. Metric geometry, 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute a power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integ (Riemann definition), techniques of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initial-boundary-value problems for ordinary and partial differential equations. farry-value problems to initial-value problems and initial-boundary-value problems for ordinary and partial differential equations. farry-value problems to initial-value problems and initial-boundary-value problems for ordinary and partial differential equations. farry-value problems to initial-value problems and initial-boundary-value problems for ordinary and partial differential equations. farry-value problems to initial-value problems and initial-boundary-value problems for ordinary and partial differential equations. farry-value problems to initial-value problems and initial-boundary-value problems for ordinary and partial differential equations. farry-value problems to initial-value problems and initial-boundary-value problems for ordinary and partial differential equations are of probability theory and mathematical statistics. The probab	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK nd conditional conv rals: primitives, defi  XZ It explains methods rential equations. Z,ZK continuing till the K corems are stated a ng are explained. Z ded by the project s  Z ded by the project s	4 5. Scalar calculation thogonal  2 4 8 vergence 3. nite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor  10 supervisor  2 2
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The baren of t	Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an ponality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrix. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalizations. Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integrations, the cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initial-boundary-value problems for ordinary and partial differential equations. tary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial differential equations are probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and b	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK nd conditional conv rals: primitives, defi  XZ It explains methods rential equations. Z,ZK continuing till the K sorems are stated a ng are explained. Z ded by the project s  Z ded by the project s  Z  Z  Z  Z  Z  d.  Z	4 5. Scalar calculation thogonal  2 4 8 sergence 3. nite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor  10 supervisor  2 2 2
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The baren of the baren of the baren of the least of t	theorem.  Linear Algebra 2  see matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an ponality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matr. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalic complements. 6. Geometry exercises and examples. 7. Adjoint operators.  Linear Algebra 1, exam  Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integ (Riemann definition), techniques of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and intial-boundary-value problems for ordinary and partial differential equations. dary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial differential expectation of as a random variable, distribution function of random variable and characteristics of random variable are treated and basic limit the basis of this theory the basic methods of mathematical statistics such as estimation of distribution parameters and hypothesis testi  Bachelor Project 1  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Bachelor Project 2  chelor project is based on a topic approved by the administrators of the programme, department and by the dean. The student is guic during common regular meetings and discussions.  Simulations	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK nd conditional conv rals: primitives, defi  XZ It explains methods rential equations. Z,ZK continuing till the K corems are stated a ng are explained. Z ded by the project s  Z ded by the project s  Z d. Z or the curves are ir	4 5. Scalar calculation thogonal  2 4 8 sergence 3. nite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor  2 2 2 atroduced
01YLAL2 Outline: 1. Inverproduct and orthog of determinants  01YLALZ 01YMAN  01YMAN2 1. Continuation of Real and complex  01YMANZ 01YMME2 The course is devo bound 01YPRST It is a basic course definition. The noti On the 02BPJC1 Abstract: The baren of the baren of the baren of the least of t	Linear Algebra 2 se matrix and operator. 2. Permutation and determinant. 3. Spectral theory (eigenvalue, eigenvector, diagonalization). 4. Hermitian an ponality. 6. Metric geometry. 7. Riesz theorem and adjoint operator. Outline of the exercises: 1. Methods for calculation of inverse matrix. 3. Calculation of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalization of eigenvalues and eigenvectors. 4. Hermitian and quadratic forms. Canonical form. 5. Scalar product and orthogonalizations. Calculus 1  Basic calculus (real analysis, functions of one real variable, differential calculus).  Calculus 2  differential calculus: Taylor's Polynomials, Taylor's formula 2. Infinite series: criteria of convergence, operations on series, absolute an power series, the Cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integrations, the cauchy-Hadamard theorem, expansion of function into power series, summation of infinite series. 4. Theory of integration and application of integrals, Generalized Riemann integral  Calculus 1, exam  Numerical Methods 2  ted to numerical solution of boundary-value problems and initial-boundary-value problems for ordinary and partial differential equations. tary-value problems to initial-value problems and finite-difference methods for elliptic, parabolic and first-order hyperbolic partial differential equations are probability theory is build gradually beginning with the classical definition and ons as random variable, distribution function of random variable and characteristics of random variable are treated and b	Z,ZK d quadratic forms. ices. 2. Methods of ty. Calculation of or  ZK Z,ZK nd conditional conv rals: primitives, defi  XZ It explains methods rential equations. Z,ZK continuing till the K corems are stated a ng are explained. Z ded by the project s  Z ded by the project s  Z d. Z or the curves are ir	4 5. Scalar calculation thogonal  2 4 8 sergence 3. nite integral  4 2 s converting  4 Colmogorov and proved.  5 supervisor  2 2 2 atroduced

			T
	Introduction to Curves and Surfaces 2 Is the course 02UKP1. The properties of the first fundamental form are briefly summarized. The concept of the second fundamental form are briefly summarized.	Z form is introduce	2 d, leading to
	the mean and Gaussian curvature. Finally, the usual concepts of Riemann geometry are introduced.		, 0
02YDEF1	History of Physics 1	Z	2
	ice in the system of sciences. The relationship of man and nature. Natural sciences in ancient Orientand Greece, Greek natural philo	sophers, Aristotl	e. Physics in
	Archimed. Arabic science, European science in Middle Ages. Renaissance - da Vinci, Giordano Bruno. Copernicus, Kepler, Galileo, F	•	-
•	as experimental science. Newton and his work.	, 0	. ,
02YDEF2	History of Physics 2	Z	2
	f classical mechanics after Newton, Bernoulli's, Euler, Lagrange. Historical development of optics, corpuscular and wave approach. E	<del>-</del>	I
•	anism, electrodynamics and electromagnetism, Faraday and Maxwell. Thermodynamics and its laws, statistical physics, Boltzmann. T	-	-
-			-
and relativistic pr	hysics, Planck and Einstein. Discovery of radioaktivity, structure of atom, atomic nucleus, Rutherford and Bohr. The way to nuclear en	iergy, Elementar	y particles,
	standard model. The concept of Nature and Universe of today.		1 -
02YDPD1	Detectors and Principles of Detection 1	ZK	2
bstract: The lectur	res introduce the main forms of interaction of some particles with matter. The goal is that the student gets an overview of what type o	of processes are	possible an
	in which situations they may be dominant. Some applications to Medicine and to study the fundamental structure of matter are pre	esented.	
02YDPD2	Detectors and Principles of Detection 2	ZK	4
Abstract: The led	ctures introduce the main ideas needed to understand how detector systems work. It will be focused on gaseous detecting principles,	, scintilating prine	ciples and
	semiconductor detecting principles. Basic information about various detector constructions is provided.		
02YELMA	Electricity and Magnetism	Z,ZK	6
	ulomb's law, electrostatic field, Gauss' law. Electric dipole, polarization. Conductors anddielectrics. Electric current and circuits, condu		_
-	Electrodynamic forces, magnetic field. Magnetic dipole, magnetics. Electromagnetic induction, ac currents. Electromagnetic waves, M	-	
02YEXF	Experimental Physics	ZK	2
	'		
e goal of this sub	ject is to introduce the students the principles of physics measurements, their techniques, methods and instruments that are used for	such measuren	ienis, and ii
	analysis of measured data.		
02YFYS1	Physical Seminar 1	Z	2
The seminar is de	evoted to detailed study of interesting physical problems. It should help students to deeper understanding of fundamentals of physics	s presented in the	e course of
Mecha	nics. The problems are chosen, studied and presented by the students themselves, with the possibility to use PC and physical labora	atory equipments	
02YKM1	Quantum Mechanics 1	Z,ZK	6
stract: The lecture	e describes the birth of quantum mechanics and description of one particle and more particles by elements of the Hilbert space as we	ll as its time evolu	ution. Beside
	that it includes description of observable quantities by operators in the Hilbert space and calculation of their spectra.		
02YKM2	Quantum Mechanics 2	Z.ZK	6
	ture expands the introduction to quantum mechanics with more general formalism of quantum theory, approximate methods and path	,	1
		-	
minology and me	thods used in various applications of quantum mechanics and prepares the students for an effective scientific research and further students for the students fo	uy, iii particular, t	or the mode
	formulations of quantum field theory.		· .
02YMECH	Mechanics	Z	4
roduction to physic	cs, physical quantities and units. Particle kinematics, basic types of motion and theirsuperposition. Particle dynamics, one-dimensiona	al equations of m	notion, motion
in central force fie	eld, forces innoninertial reference frames. Mechanics of system of free particles, two-body problem, collisions. Mechanics ofrigid body	y, rotation. Funda	amentals of
	continuum mechanics, elasticity, hydrodynamics. Sound.		
02YMECHZ	Mechanics - Examination	ZK	2
,	The content of the cultivative the committee according to the plan of studios		'
	The content of the subject is the examination according to the plan of studies.		
02YPRA1		K7	T 6
02YPRA1	Experimental Laboratory 1	KZ	6
ecture is intended	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear En	ngineering). But i	t can be als
ecture is intended tended by students	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ers interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the	ngineering). But i eliterature), the in	t can be als
ecture is intended tended by students	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ers interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation	ngineering). But i eliterature), the in	t can be als
ecture is intended tended by students the measuremen	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ers interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the t (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.	ngineering). But i eliterature), the in on of results. At th	t can be als
ecture is intended tended by students the measuremen	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2	ngineering). But i eliterature), the in on of results. At the	t can be als
ecture is intended tended by students the measuremen 02YPRA2	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ers interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the t (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.	ngineering). But i eliterature), the in on of results. At the	t can be als
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i	t can be als replementati he same tir 6 t can be als
ecture is intended to the measuremen 02YPRA2 ecture is intended tended by students	Experimental Laboratory 1 I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Err	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i eliterature), the in	t can be als applementation he same tines 6 t can be als applementation
ecture is intended to the measuremen 02YPRA2 ecture is intended tended by students	Experimental Laboratory 1 I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i eliterature), the in	t can be als applementation he same tines 6 t can be als applementation
ecture is intended ended by students the measuremen 02YPRA2 ecture is intended ended by students the measuremen	Experimental Laboratory 1 I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Errs interested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i eliterature), the in	t can be als applementation he same tines 6 t can be als applementation
ecture is intended ended by students the measuremen 02YPRA2 ecture is intended ended by students the measuremen 02YROZ1	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i eliterature), the in on of results. At the	t can be also also also also also also also also
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1 Interval and	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i eliterature), the in on of results. At the	t can be also also also also also also also also
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 ne aim of the semi	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.	ngineering). But i eliterature), the in on of results. At the KZ ngineering). But i eliterature), the in on of results. At the Z ne presentation a	t can be als applementation he same times a same times als applementation he same times a same t
ecture is intended tended by students the measuremen  02YPRA2 ecture is intended tended by students the measuremen  02YROZ1 ne aim of the semi	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1 Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2	ngineering). But i bliterature), the in on of results. At the square ring in the square ring is square ring. But i bliterature), the in on of results. At the z	t can be also plementation be same tine same t
ecture is intended ended by students the measuremen  02YPRA2 ecture is intended ended by students the measuremen  02YROZ1 eaim of the semi	Experimental Laboratory 1 It especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 It especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total cardinal procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.	ngineering). But i bliterature), the in on of results. At the significant of the signific	t can be als applementation for the same times and the same times also applementation for the same times are times and the same times are times are times are times and the same times are times
ecture is intended ended by students the measuremen 02YPRA2 ecture is intended ended by students the measuremen 02YROZ1 e aim of the semi	Experimental Laboratory 1  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.	ngineering). But i bliterature), the incomposer of results. At the second secon	t can be als applementation be same tine same
ecture is intended ended by students the measuremen 02YPRA2 ecture is intended ended by students the measuremen 02YROZ1 e aim of the semi 02YSF	Experimental Laboratory 1  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics	ngineering). But i bliterature), the incompose of results. At the second	t can be als applementation be same tired as a
ecture is intended ended by students the measuremen 02YPRA2 ecture is intended ended by students the measuremen 02YROZ1 e aim of the semi 02YSF	Experimental Laboratory 1  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.	ngineering). But i bliterature), the incompose of results. At the second	t can be als applementation be same tired as a
ecture is intended ended by students the measuremen 02YPRA2 ecture is intended ended by students the measuremen 02YROZ1 e aim of the semi 02YSF e goal of these le	Experimental Laboratory 1  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the tacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics	ngineering). But i pliterature), the incomposer of results. At the second secon	t can be als applementation be same tired as a
ecture is intended the measuremen  02YPRA2 ecture is intended the measuremen  02YROZ1 the measuremen  02YROZ1 the aim of the semi  02YROZ2 the aim of the semi  02YSF the goal of these left	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interval in the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interval int	ngineering). But i pliterature), the incomposer of results. At the second secon	t can be also also also also also also also also
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 he aim of the semi 02YROZ2 he aim of the semi 02YSF he goal of these leaws of microcosm	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extend the knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  ectures is to present basic knowledge of particle physics. Students will become familiar with the structure of the matter, with elementances is to present basic soft quantum mechanics and the theory of relativity needed for the description of elementary particles become familiar with basic accelerating principles and with current particle physics experimental centers.	ngineering). But i eliterature), the interest on of results. At the second of the seco	t can be also also also also also also also also
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 ne aim of the semi 02YROZ2 ne aim of the semi 02YSF ne goal of these le laws of microcosm	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extend the knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics experimental centers.  Subatomic Physics 2	ngineering). But i seliterature), the incomposer of results. At the seliterature of th	t can be alst the same tine same tin
ecture is intended tended by students the measuremen  02YPRA2 ecture is intended tended by students the measuremen  02YROZ1 ne aim of the semi  02YROZ2 ne aim of the semi  02YSF ne goal of these le laws of microcosn  02YSF2 The aim of the cou	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics experimental centers.  Subatomic Physics 2  Interview of the most centering principles and with current particle physics experimental centers.  Subatomic Physics 2  Interview of the most centering procedure of the most centers of the matter, with elementary particles and with current particle physics experimental centers.	ngineering). But i seliterature), the incomposer of results. At the seliterature incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results	t can be also also also also also also also also
ecture is intended tended by students the measuremen of the semi o	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interview of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics of relativity needed for the description of elementary particles become familiar with basic accelerating principles and with current particle physics experimental centers.  Subatomic Physics 2  I resist to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting th	ngineering). But i seliterature), the incomposer of results. At the seliterature incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results	t can be also also also also also also also also
ecture is intended tended by students the measuremen of the semi of the coule measured. They	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interval a selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interval a students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics experimental centers.  Subatomic Physics 2  Interval a students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear physics.  Part of the lectures is also getting to cosmic radiation and applications of nuclear physics.	ngineering). But i beliterature), the incomposer of results. At the second of results. At the presentation at the second of results. At the presentation at the second of results. At the second of resu	t can be also also applementation be same tinded to can be also applementation be same tinded as a control of the same tinded
ecture is intended tended by students the measuremen of the semi o	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensisterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensisterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interior is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  sectures is to present basic knowledge of particle physics. Students will become familiar with the structure of the matter, with elementances and the theory of relativity needed for the description of elementary particles become familiar with basic accelerating principles and with current particle physics experimental centers.  Subatomic Physics 2  Interior is to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic rewill learn basic models, whichdescribe the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting to cosmic radiation and applicat	ngineering). But i seliterature), the incomposer of results. At the seliterature incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results. At the seliterature incomposer of results incomposer of results incomposer of results. At the seliterature incomposer of results	t can be als applementation he same times and be als applementation he same times and
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 ne aim of the semi 02YROZ2 ne aim of the semi 02YSF ne goal of these lelaws of microcosn 02YSF2 The aim of the coule measured. They	Experimental Laboratory 1 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2 Il especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Interval a selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Interval a students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics experimental centers.  Subatomic Physics 2  Interval a students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear physics.  Part of the lectures is also getting to cosmic radiation and applications of nuclear physics.	ngineering). But i beliterature), the incomposer of results. At the second of results. At the presentation at the second of results. At the presentation at the second of results. At the second of resu	t can be als applementation he same times and
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 ne aim of the semi 02YROZ2 ne aim of the semi 02YSF ne goal of these leaws of microcosn 02YSF2 the aim of the coule measured. They	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensisterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensisterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total caquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  In nar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  In nar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Suctures will include basics of quantum mechanics and the theory of relativity needed for the description of elementary particles become familiar with basic accelerating principles and with current particle physics experimental centers.  Subatomic Physics 2  I rese is to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic realization and applications of nuclear physics.  Special Theory of Relativity  Students extend their knowledge of classical, non-quantum mechanics of the special theory of relativity fundamentals.	ngineering). But i beliterature), the incomposer of results. At the second of results. At the presentation at the second of results. At the presentation at the second of results. At the second of resu	t can be also also also also also also also also
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 ne aim of the semi 02YROZ2 ne aim of the semi 02YSF ne goal of these leaws of microcosn 02YSF2 the aim of the coule measured. They	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics 2  Irse is to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting to cosmic radiation and applications of nuclear physics.  Special Theory of Relativity  Students extend their knowledge of classical, non-quantum mechanics of the special theory of relativity fundamentals.  Theoretical Physics 1	ngineering). But i pliterature), the incomposition of results. At the composition of results and the composition of results. At the composition of results are composition of results. At the composition of results are composition of results. At the composition of results are composition of results. At the composition of results are composition of results. At the composition of results are composition of results. At the composition of results are composition of results. At the composition of results are composition of results are composition of results. At the composition of results are composition of results are composition of results are composition of results. At the composition of results are composi	t can be also also also also also also also also
ecture is intended tended by students the measuremen 02YPRA2 ecture is intended tended by students the measuremen 02YROZ1 ne aim of the semi 02YROZ2 ne aim of the semi 02YSF ne goal of these leaws of microcosn 02YSF2 the aim of the coure measured. They 02YTEF1 ne course is an intended tended by students the measuremen 02YROZ2 ne aim of the semi 02YSF ne goal of these leaws of microcosn 02YSF2 ne aim of the coure measured. They	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendible knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the total (acquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendible knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  nar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  nar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  sectures is to present basic knowledge of particle physics. Students will become familiar with the structure of the matter, with elementa nos. Lectures will include basics of quantum mechanics and the theory of relativity needed for the description of elementary particles become familiar with basic accelerating principles and with current particle physics experimental centers.  Subatomic Physics 2  urse is to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also get	regineering). But i beliterature), the incomposer of results. At the literature incomposer of results incomposer of results incomposer of results. At the literature incomposer of results incomposer	t can be also also applementation be same time same same same same same same same sa
octure is intended ended by students the measuremen or commensuremen or commensuremens	Experimental Laboratory 1  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Experimental Laboratory 2  I especially for students who intend to study some of the physical specializations of FNSPE(branch Physical Engineering, Nuclear Ensinterested in the otherspecializations. In Experimental laboratory students learn how to prepare for experiments (including work with the totacquire of different experimental procedures and routines), willteach writing the records of measurement, processing and evaluation practically extendthe knowledge gained in lectures on physics.  Seminar on Quark-Gluon Plasma 1  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Seminar on Quark-Gluon Plasma 2  Inar is discuss the selection of the most fundamental articles in heavy ion physics. Students participate on the seminar by preparing the papers.  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics  Subatomic Physics 2  Irse is to teach students the basics of physics of atomic nucleus. Students will acquire knowledgeabout the basic properties of atomic will learn basic models, whichdescribe the structure of the atomic nucleus and nuclear reactions. Part of the lectures is also getting to cosmic radiation and applications of nuclear physics.  Special Theory of Relativity  Students extend their knowledge of classical, non-quantum mechanics of the special theory of relativity fundamentals.  Theoretical Physics 1	regineering). But i eliterature), the incomo fresults. At the como fresults. At the como fresults at the letterature), the incomo fresults. At the como fresults at the como fres	t can be als applementation be same tines are tines as a same tines are tine

00\/TEE0	The austical Dhysics 0	7 71/	4
02YTEF2	Theoretical Physics 2	Z,ZK	4
	sformations in physics. Mechanics of point mass, rigid body and continuum. The special theory of relativity: relativistic mechanics and		•
Minkowski space-ti	me. Classical electrodynamics: Maxwell's equations in the Minkowski space-time, electromagnetic waves in dielectric media, electron	nagnetic radiation in	n the dipole
	approximation.		
02YTER	Heat and Molecular Physics	Z,ZK	4
	of materials, heat transfer; stationary and non-stationary heat conduction, heat transfer and penetration; 1st and 2nd thermodynami		nd real gas.
•	cal systems: dielectric and magnetic materials; Maxwell relations and thermodynamic potentials; kinetic theory: Maxwell's velocity dis		_
02YTSFA	Thermodynamics and Statistical Physics	Z,ZK	4
	nodynamics and statistical physics. Thermodynamic potential, the Joule Thomson effect, conditions of equilibrium, the Braun-Le Chatel		
Basics of many boo	dy descriptionfrom a statistical point of view (classical and quasiclassical regime within the frame of a canonical and grand-canonical	ensemble, Fermi ç	gas, models
	of crystals and the black body radiation). The Boltzmann equation is usedto discusses simple transport phenomena.		
02YUFEC	Introduction to Elementary Particle Physics	Z	2
	se provides an easily accessible introduction to elementary particle physics. Development, methods, goals and perspectives of the su	ubiect are presente	
02YUKT	Introduction to Quantum Theory	Z	2
	The aim of the lecture is to introduce the basic principles of quantum theory and its interpretation on simple examples.		
02YVOAF	Waves, Optics and Atomic Physics	Z,ZK	6
Wave phenomena	a in mechanics and electromagnetism: modes, standing and travelling waves, wave packets indispersive media. Wave optics: polariza	tion, interference,	diffraction,
coherence. Geo	metrical optics. Introduction toquantum physics: black body radiation, quantum of energy, photoeffect, the Compton effect, the de Bro	odlie waves.the Sch	rodinaer
	equation, stationary states and spectra of finite systems.	<b>J</b> ,	3-
00\/\/04		7	4
02YVS1	Workshop 1	Z	1
Abstract: Students	will participate on annual Workshop J F, where they will present results obtained during the work on their bachelor thesis. During oth	er presentations fro	om students
an	id staff, they will also get familiar with scientific topics developed at the department and with methods other colleagues use for their s	cientific work.	
02YZM1	Foundations of Physical Measurements 1	ZK	2
	ned for students of physical specializations (Experimental particle physics, Physical engineering, Nuclear engineering), however, it o		
	ne goal of the lecture is to introduce the basics of physical measurements, the methods of processing and evaluation of acquired data		
other branches. In	basic habits of work in a physics lab.	a on a r o. oludeni.	3 learn the
02YZM2	Foundations of Physical Measurements 2	KZ	4
The lecture is design	gned for students of physical specializations (Experimental particle physics, Physical engineering, Nuclear engineering), however, it c	an be attended by	students of
other branches. Th	ne goal of the lecture is to introduce the basics of physical measurements, the methods of processing and evaluation of acquired dat-	a on a PC. Student	s learn the
	basic habits of work in a physics lab.		
02ZSM	Introduction to the Standard Model	ZK	2
	nadrons, baryons, mesons, symmetry, symmetry group, quarks, gluons, partons, standard model of electroweak and strong interaction	! !	
rarticles, leptoris, i		ris, quantum cinon	ilouyilailiics
	(QCD), cross section, scattering cross section.		
04XAM1	English for Intermediate Students M1	Z	2
The course is design	aned for students who have successfully completed the full secondary school English language course at least at the A2 level of the C	common European	Framework
of Reference for La	inguages (CEFR). It provides an introduction into English for Specific and Academic Purposes (ESP, EAP), i.e., into fundamentals of	vocabulary and sty	le typical of
professional oral a	nd written communication situations. Thus it covers topics related to the student's life and needs as well as topics of subtechnical int	erest. Attention is a	also paid to
•	extending the knowledge of grammar issues used in EAP.		•
0474140		Z	2
04XAM2	English for Intermediate Students M2	. – .	,
	expects the student to have completed the AM1 course. It develops their skills for work with subtechnical texts, focusing also more or		
and lexical items type	oical of ESP and EAP (e.g., definition, existence and classification of phenomena, object descriptions). Part of the course is also guided	writing. If necessar	ry, grammar
	revision is included.		
04XAM3	English for Intermediate Students M3	Z	2
	s the skills that enable students to cope with features typical of professional style. Increasing attention is paid to developing subtechnic	al vocabulary and it	
-	professional texts. Great emphasis is placed on distinguishing different levels of formal and informal oral and written communication	· ·	-
_	surse also includes studying abstracts and rules for writing them as well as basic rules for preparing and giving a short presentation o		
equivalents. The co		ii a ciloseii topic ie	siated to the
	student's field.		
04XAMZK	English for Intermediate Students Examination	ZK	4
The course conte	ent is the examination as given by the study plan. The examination covers the AM1, AM2, and AM3 courses and consists of two parts	; - written (100 min)	) and oral
(20-3	30 min). The student is expected to master the AM syllabus and demonstrate the ability to apply their knowledge gained in the three I	English courses.	
04XAP1	English for Advanced Students P1	Z	2
-	gned for students who have successfully completed the full secondary school English language course (at least the B1 level of the C	1	
	Languages - CEFR). It provides an introduction into English for Specific and Academic Purposes (ESP, EAP), i.e., into the fundamen	•	
		•	
-	e typical of professional oral and written communication situations (fundamentals of terms in mathematics and physics, definitions, g		
covers professional	oral and written communication on topics related to the undergraduate's life and needs. It develops skills for free professional writing (w	riting a CV, letter of	application,
	polite request). If necessary, revision of selected grammar topics is included.		
04XAP2	English for Advanced Students P2	Z	2
The AP2 course is	based on AP1, thus extending the student's skills for working with subtechnical texts, and even with professional texts of chosen bra	nches of science. A	According to
	s it concentrates on chosen grammar topics, but mainly intends to develop understanding of syntactic structures and typical rhetorica		_
	d, if possible, a case study). Increasing emphasis is placed on the undergraduate's independent work with and reading of linguistical	· -	
· ·	s the student's subtechnical vocabulary, and includes fundamental notions of chosen branches of science. It is focused on formal writ	-	_
THE COURSE EXICITES		ing including the Se	mono and
0.024.55	paragraph structure, linking, cohesion and coherence in texts.		_
04XAP3	English for Advanced Students P3	Z	2
The AP3 course is I	based on AP2 and expects the student to work without any guidance with authentic professional materials and to interpret the text. It in	cludes training oral	and written
communication sk	ills and functions (e.g., expressing an opinion, agreement, and objections; taking part in discussion, note-taking; summarizing, writing	g an abstract) and,	if possible,
also preparing a	project on a given or chosen topic and presenting it. The course places emphasis on distinguishing levels of formal and informal lang	uage both in oral a	nd written
	communication.		
04XAPZK			
	English for Advanced Students Examination	フド	4
	English for Advanced Students Examination	ZK	4 ge obtained
The course content	is the examination as given by the study plan. The student is supposed to demonstrate mastering the AP3 syllabus and the ability to a	apply their knowled	ge obtained
The course content		apply their knowled	ge obtained

0.41/050144			
04XCESM1	Czech for Foreigners - Intermediate 1 sed on correct pronunciation, important morphological phenomena, prepositional phrases, and verb forms as well as on extending the st	Z Ident's vocabular	2 v for various
The course is locus	social situations.	adent 3 vocabalai	y ioi various
04XCESM2	Czech for Foreigners - Intermediate 2	Z	2
The course develop	ps the topics covered in CESM1 and is then focused on more difficult grammar phenomena. It practices writing, speaking, and reading	g skills and trains	the student
04XCESM3	in understanding common abbreviations, abbreviated words, and mathematical terms and formulas.	Z	2
	Czech for Foreigners - Intermediate 3  evises morphological topics covered earlier and extends the student's knowledge of more difficult language phenomena. It is especia	_	1
	lexicology and on developing the student's writing skills.	.,,	
04XCESMZK	Czech for Intermediate Students Examination	ZK	4
The course conten	nt is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the CESI	M1,2,3 courses a	nd can only
041/05004	be taken after successful completion of the 3 courses. Detailed information is to be obtained from the teacher.		
04XCESP1	Czech for Foreign Students - Advanced 1 the course is very good knowledge of the Czech language, i.e., communicative competences at least at level B2 of the Common Europ	Z ean Framework o	2 f Reference
	on revision of standard language structures, but mainly on practising more complex grammatical structures typical of the style of scie		
	nal style of engineering and professional communication, both in spoken and written form. The topics include University Studies and S		-
	includes communication with teachers and faculty administrators.		T
04XCESP2	Czech for Foreigners - Advanced 2	Z	_ 2
This course extende	Is the student's knowledge acquired in CESP1 and focuses on difficult language phenomena. It practises working with technical and s emphasis on individual work.	pecialist texts pla	cing greater
04XCESP3	Czech for Foreigners - Advanced 3	Z	2
	os the student's knowledge from CESP2. It includes working with authentic specialist materials, their interpretation and presentation, a	<del>-</del>	_
	student's project. Writing skills necessary for professional communication are trained.		
04XCESPZK	Czech for Foreign Students - Advanced Examination	ZK	4
The course conter	nt is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the CES	P1,2,3 courses ar	nd can only
04705074	be taken after successful completion of the 3 courses. Detailed information is to be obtained from the teacher.	7	
04XCESZ1	Czech for Foreigners - Beginners 1 gned for students of the English programme. Students will become acquainted with the main characteristics of Czech (phonetic and gr	Z ammar features)	2
_	uage and speaking skills. The course focuses on pronunciation exercises, simple social phrases, and oral and written communication is	•	-
	situations. The course covers roughly lessons 1-3 of eština Express (Czech Express) by L. Holá and P. Bo ilová.		
04XCESZ2	Czech for Foreigners - Beginners 2	Z	2
i ne language and	communication competences acquired in CESZ1 are further developed. Students deepen their knowledge of the declension and con	jugation system a	ind practise
	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.		
04XCESZ3	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3	Z	2
04XCESZ3 The course furthe	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on be	Z puilding up basic v	2 vocabulary,
04XCESZ3 The course furthe fixing correct pronu	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3	Z ouilding up basic v simple texts and t	2 ocabulary, hey practise
04XCESZ3   The course furthe fixing correct pronu frequent types of dia	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on bunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.	Z puilding up basic v simple texts and t lessons 5-7 in e	2 vocabulary, hey practise ština expres
04XCESZ3 The course furthe fixing correct pronu frequent types of diagonal of the course of the cour	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on translation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination	Z  puilding up basic visimple texts and to lessons 5-7 in expensed.	2 vocabulary, hey practise ština expres
04XCESZ3 The course furthe fixing correct pronu frequent types of diagonal of the course of the cour	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on burnication and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X6	Z  puilding up basic visimple texts and to lessons 5-7 in expensed.	2 vocabulary, hey practise ština expres
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conternal frequence of the course conternal frequency for the course for the course frequency for the course frequency for the course frequency f	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on translation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination	Z  puilding up basic visimple texts and to lessons 5-7 in existed to the second	2 /ocabulary, hey practise ština expres 4 es and can
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on burciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.	Z  puilding up basic visimple texts and to lessons 5-7 in extended to the control of the control	2 /ocabulary, hey practise ština expres 4 es and can
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to co	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on bunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to train	Z  puilding up basic visimple texts and to lessons 5-7 in expenses  ZK  CESZ1,2,3 course  Z  rritten and oral for a main general and oral for a main general and a main course or a main general and a main course.	2 //ocabulary, hey practise ština expres 4 es and can 2 m. Students technical
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to conformation and to significant to the course conter of the course content of the course content of the course content of the course c	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on bunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04Xi only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systems	Z  puilding up basic visimple texts and to lessons 5-7 in expenses  ZK  CESZ1,2,3 course  Z  ritten and oral for insmit general and mizes and expanding expenses  To see the course of t	2 //ocabulary, hey practise ština expres 4 es and can 2 m. Students I technical ds language
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to conformation and to skills gained in previous free forms.	Czech for Foreigners - Beginners 3 er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on bunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1 ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systervious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person	Z puilding up basic v simple texts and t lessons 5-7 in e  ZK CESZ1,2,3 course  Z rritten and oral for nsmit general and mizes and expand al statement, requ	2 //ocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answer
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to coinformation and to skills gained in prev to an advert,	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on triciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo	Z puilding up basic v simple texts and t lessons 5-7 in e  ZK CESZ1,2,3 course  Z rritten and oral for nsmit general and mizes and expand al statement, requ	2 //ocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answere texts.
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to co information and to skills gained in prev to an advert, 04XFM2	Czech for Foreigners - Beginners 3 er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on bunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1 ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systervious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person	Z puilding up basic v simple texts and t lessons 5-7 in e  ZK CESZ1,2,3 course  Z ritten and oral for nsmit general and mizes and expand al statement, require to based on these	2 //ocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answer texts.  2
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to coinformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds	Czech for Foreigners - Beginners 3 er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on brinciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce alogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1 atter FM The objective of this three-semester course is to improve and further develop communication in the French language in both wormunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, working the province of	Z puilding up basic visimple texts and to lessons 5-7 in expenses and	2 //ocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to coinformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan	Czech for Foreigners - Beginners 3 er develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on brinciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination ent is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X0 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1 ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both word in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, working for Intermediate Students M2 on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science texts are guage (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science texts and architects. Description of an object, device, shapes, dimensions, material.	Z suilding up basic visimple texts and to lessons 5-7 in expected by the lessons 5-7 in expec	2 //ocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to conformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  or develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on bunciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  atte FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo French for Intermediate Students M2  on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science texts are grouped in the properties of the pr	Z suilding up basic visimple texts and to lessons 5-7 in existence of the lessons of t	2 //ocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to coinformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  or develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on traciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  In it is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04Xt only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wormunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to translove problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, working the problems of the problems	Z puilding up basic visimple texts and to lessons 5-7 in existence and to lessons 5-7 in existence and oral for a lessons and expandial statement, required based on these and technological and technological statement and infinity and technological statement, and the lessons are and technological statement and	2 //ocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses,
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to coinformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structure	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  or develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on traciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce falogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04XI only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both with a solve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts are guage (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French sciences (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science texts and architects. Description of an object, device, shapes, dimensions, material.  French for Intermediate Students M3  sed on improvement and further development of linguistic competence acquired during the follow-up courses. Syntactic structures (subcres, compound tenses). Text summaryStudents prepare a written paper which will be delive	Z puilding up basic visimple texts and to lessons 5-7 in existence and to lessons 5-7 in existence and oral for a lesson and expandial statement, required based on these and technological and technological statements. The paper is line and infinity in the paper is line and infinity in the paper is line and text.	2 //ocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to conformation and to skills gained in prevent oan advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' further structure field of students	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  or develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on traciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce ialogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly  1.  Czech for Foreigners Beginners - Examination  In it is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04Xt only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wormunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to translove problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, working the problems of the problems	Z suilding up basic visimple texts and to lessons 5-7 in existence of the lessons of t	2 //ocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conterval frequent types of dia 04XFM1 French - intermedia will be able to conformation and to skills gained in preval to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' fur and one 04XFMZK	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on the creation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce lalogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04Xi only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wormmunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to train solve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systemicus study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts graph (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science (passives, nominalization, word formation). Topics: physics, power engineering, environment, internet, success of French science for Intermediate Students M3  French for Intermediate Students File Stu	Z suilding up basic visimple texts and to lessons 5-7 in existence of the second secon	2 //ocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conterval french - intermedia will be able to conformation and to skills gained in preval to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structurifield of students' fur and one 04XFMZK	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCES21 and XCES22 courses. The teaching focuses on the court of the course covers roughly allogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly a course is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  atter FM The objective of this three-semester course is to improve and further develop communication in the French language in both with the objective of this three-semester course is to improve and further develop communication in the French language in both with the objective of this three-semester course is to improve and further develop communication in the French language in both with the objective of this three-semester course is to improve and further develop communication in the French language in both with the objective of this three-semester course is to improve and further develop communication in the French language in both with the objective of this three-semester course is to improve and further develops communication in the French language in both with the objective of this three-semester course is to improve and further develops linguistic competence acquired at secondary school. It revises, systemically the following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics, Peading technical and popular science texts and particles of the provious study	Z suilding up basic visimple texts and to lessons 5-7 in existence of the second of th	2 vocabulary, hey practise ština expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conterval french - intermedia will be able to conformation and to skills gained in preval to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structurifield of students' fur and one 04XFMZK The content is the	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holâ and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on burication and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce alogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both wommunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to translove problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systerious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo French for Intermediate Students M2  on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science texts guage (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science scientists, artists and architects. Description of an object, device, shape, dimensions, material.  French for Intermediate Students M3  sed on improvement and further development of	Z suilding up basic visimple texts and to lessons 5-7 in existence of the second of th	2 //ocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4 xamination
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conter 04XFM1 French - intermedia will be able to conformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' fur and one 04XFMZK The content is the 04XFP1	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on transciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce alogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04Xi only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both we mmunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transcribe problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo French culture and competence acquired in previous study are systemized and expanded. Reading popular science text grague (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science acquired in previous study are systemized and expanded. Reading popular science text grague (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science text grag	z suilding up basic visimple texts and telessons 5-7 in existence of the second	2 vocabulary, hey practise ština expres  4 es and can  2 m. Students It technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4 xamination
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conterval of the course conterval of the course conterval of the course information and to sakills gained in preval of the course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' further content is the 04XFMZK The content is the 04XFP1 FP advanced course	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  If develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on the course of the course o	z suilding up basic visimple texts and telessons 5-7 in existence and expansion and ex	2 vocabulary, hey practise ština expres  4 es and can  2 m. Students It technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4 xamination  2 students will
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course conterval of the course conterval of the course conterval of the course information and to sakills gained in preval of the course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' further content is the 04XFMZK The content is the 04XFP1 FP advanced course be able to communication of the course is focus participle structure field of students' further content is the course in the course is focus participle structure and one 04XFMZK The content is the course of the course in the	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on transciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce alogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04Xi only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both we mmunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transcribe problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systevious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo French culture and competence acquired in previous study are systemized and expanded. Reading popular science text grague (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science acquired in previous study are systemized and expanded. Reading popular science text grague (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science text grag	z suilding up basic visimple texts and telessons 5-7 in existence of the second	2 //ocabulary, hey practise stina express  4 es and can  2 m. Students It technical ds language exest, answer exets.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4 xamination  2 tudents will rmation and
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course contel 04XFM1 French - intermedia will be able to conformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structurifield of students' fur and one 04XFMZK The content is the 04XFP1 FP advanced cours be able to community solve problems. Fpassé composé-im	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  redevelops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on traciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce lalogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04XI only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both w mmunicate in social interaction and in academic, scientific and professional environment. They will be able to use the language to transolve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, syste vious study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person  French for Intermediate Students M2  on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science texts guage (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French science scientists, artists and architects. Description of an object, device, shapes, dimensions, material.  French for Intermediate Students M3  sed on improvement and further development of linguistic competence acquired the follow-up courses. Syntactic structures (subces, compound tenses). Text summaryStudents pre	z suilding up basic visimple texts and telessons 5-7 in existence of the second	2 vocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, hed to the ench articles 4 xamination  2 titudents will rmation and d: subjonctif, Il statement,
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course contel 04XFM1 French - intermedia will be able to conformation and to skills gained in prev to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structurifield of students' fur and one 04XFMZK The content is the 04XFP1 FP advanced cours be able to community solve problems. Fpassé composé-im	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on tenciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce alogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X1 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both with municate in social interaction and in academic, scientific and professional environment. They will be able to use the language to train solve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systemicus study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo French for Intermediate Students M2  on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science text grauge (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French sciences scientists, artists and architects. Description of an object, device, shapes, dimensions, material.  French for Intermediate Students M3  and on improvement and further developm	Z puilding up basic visimple texts and telessons 5-7 in existence of the control	2 vocabulary, hey practise stina expres  4 es and can  2 m. Students technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, hed to the ench articles 4 xamination  2 titudents will rmation and d: subjonctif, Il statement,
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course content of the course content of the course content of the course information and to sakills gained in prevalum to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' further content is the 04XFMZK The content is the 04XFP1 FP advanced course be able to community to solve problems. Fp passé composé-im request, answer to a content of the course of the course of the course of the course of the community of the course of the community of the course of the	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  r develops the language and communication competences acquired in the XCES21 and XCES22 courses. The teaching focuses on the incitation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce allogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X1 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both with a municipal problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systemicus study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, with the course publication, word formation). Topics: physics, power engineering, environment, Internet, success of French science scientists, artists and architects. Description of an object, device, shapes, dimensions, material.  French for Intermediate Students M3  sown knowledge/experienceLonger monologues on topics /situations set for the examination are prepared. Text structure, cohesic est, sown knowledge/experienceLonger monologues on topics /situations set for the examination are prepared. Text structure, cohesic French for Intermediate Students Examination  examination as given by the st	z suilding up basic visimple texts and telessons 5-7 in existence of the second	2 vocabulary, hey practise ština expres  4 es and can  2 m. Students It technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles 4 xamination  2 tudents will rmation and d: subjonctif, Il statement, nathematics,
04XCESZ3 The course furthe fixing correct pronu frequent types of dia 04XCESZZK The course content of the course content of the course content of the course information and to sakills gained in prevalum to an advert, 04XFM2 Course FM2 builds and scientific lan 04XFM3 The course is focus participle structure field of students' full and one 04XFMZK The content is the 04XFP1 FP advanced course be able to community to solve problems. Fp passé composé-im request, answer to a 04XFP2	basic communication topics. The course covers roughly lessons 3-5 in Czech Express by L. Holá and P. Bo ilová.  Czech for Foreigners - Beginners 3  In develops the language and communication competences acquired in the XCESZ1 and XCESZ2 courses. The teaching focuses on tenciation and deepening grammar, features through practice, as well as introducing the Czech culture. Students are asked to produce alogue. They also practise understanding texts in terms of main ideas or looking for specific details in texts. The course covers roughly 1.  Czech for Foreigners Beginners - Examination  Int is the examination as given by the study plan. The examination consisting of a written and oral part covers all the topics of the 04X1 only be taken after successful completion of all three courses. Detailed information is to be obtained from the teacher.  French for Intermediate Students M1  ate FM The objective of this three-semester course is to improve and further develop communication in the French language in both with municate in social interaction and in academic, scientific and professional environment. They will be able to use the language to train solve problems. FM1 The course builds on and further develops linguistic competence acquired at secondary school. It revises, systemicus study. The following topics are covered: University studies in our country and in France, writing of transactional letters, CV, person French culture and geography, Paris. Topics of specialization: mathematics, physics. Reading technical and popular science texts, wo French for Intermediate Students M2  on FM1. Linguistic structures and competence acquired in previous study are systemized and expanded. Reading popular science text grauge (passives, nominalization, word formation). Topics: physics, power engineering, environment, Internet, success of French sciences scientists, artists and architects. Description of an object, device, shapes, dimensions, material.  French for Intermediate Students M3  and on improvement and further developm	z puilding up basic visimple texts and telessons 5-7 in existence of the second	2 vocabulary, hey practise ština expres  4 es and can  2 m. Students It technical ds language uest, answer e texts.  2 for technical gy, French  2 tive clauses, nked to the ench articles chart and the proper subjectif, il statement, nathematics,

04XFP3 French for Advanded Students P3	Z	2
The course is focused on systemization and improvement of acquired linguistic competence, skills and knowledge, and their use for communication in eng		
skill - translation of shorter texts (both from and into the language). Writing of a paper and making oral presentation in-class. The paper generally cover- topic. It is a creative work compiled from 3 French sources. Preparation of several set topics for oral examination.	s a technical /applie	ed science
04XFPZK French for Advanced Students Examination	ZK	4
The whole French program is ended with an examination covering the contents of FP1-FP3. The examination consists of a written and/or an oral part a		-
Examination Instructions, a document available on the web. Assessment of the presentation is included into the examination gra	ading.	_
04XFZ1 French for Beginners Z1	Z	2
French for beginners The objective of this 5-level course is to be able to communicate in French orally and in writing in situations of everyday life, in soci		
The course includes French for specific / technical communication and reading of popular science and scientific texts. FZ1 The objective is to be able to level, actively using the knowledge of chosen elementary language. The contents is roughly outlined by lessons 1 - 7 of the textbook Pravda - Prav		
Francouzština pro za áte ky). It is extended with situations of communication and functions from the textbook Espaces I, lessons 1-4: introductions, pe	_	
giving the directions, simple instructions and questions. Special attention is paid to pronunciation. Spelling is explained in connection with pronu	nciation and gramm	ar.
04XFZ2 French for Beginners Z2	Z	2
The course is linking up with FZ1. Elementary linguistic knowledge and communication skills are expanded. The scope is given by lessons 8 - 13 of the		
French for Beginners . Additional topics and skills are filled in from the textbook Espaces I, lesson 1 - 5 (introductions, invitation, welcoming, agreeme hanking, travelling, map of France, food, expression of will, wish, order, prohibition, pleasure). Correct pronunciation is practiced. Stress on oral communic	<u>-</u>	
How does the machine work? A few expressions concerning the study. Name of University and Faculty.	-,,,	
04XFZ3 French for Beginners Z3	Z	2
The course builts upon FZ2. Basic linguistic knowledge and skills are developed. The contents is given by lessons 14 - 18 of the textbook: Pravda -		- 1
Topics, functions and situations are complemented from other materials. Stress is put on oral communication in dialogues and on reading, both for info pronunciation practice. Reading covers short adapted texts of general interest first, and later popular science texts.	ormation and loud a	is part of
04XFZ4 French for Beginners Z4	Z	2
The course builds up on FZ3. Basic linguistic knowledge and skills are further developed. Oral communication and reading skills are practiced. The cor		
essons 19 - 23 of the textbook French for Beginners, and is expanded with topics and functions from other materials. Reading is developed from the lecture		
Students of FJFI. The course covers generals and specific topics: health-illness, sport, free time, environment, study, travelling in France, Paris, shopping	•	sity in our
country and in France, how to write CV, application, topics in mathematics, reading physics - mechanics, informatics, internet		
04XFZ5   French for Beginners Z5 All four skills acquired in FZ4 are further developed, as well as technical language. Students prepare a paper on a chosen popular science topic. They pr	Z Z	2 class The
general contents is covered by lessons 24 - 26 of the textbook: Pravda-Pravdova, French for Beginners, and is complemented from other materials. To		
notes, success of French science and technology, information about France. Grammar is systemized and complemented with syntax (subordinate class)	auses, typical conju	nctions,
subjunctive clauses, gerund, passive.		
04XFZZK   French for Beginners Examination	ZK	3
The content is the examination as given by the study plan. The course is terminated with an examination consisting of oral and written part. The examination for examination. Its content covers the levels FZ1 - FZ5.	ation is ruled by the	document
04XNM1 German for Intermediate Students M1	Z	2
The objective of the course is to level off the students' skills in the German language. The course focuses on revision of more difficult phenomena and st		
word formation processes (e.g. importance of verb prefixes). In the lexical part, it covers topics referring to higher education in both the Czech Repu environmental issues together with all necessary expressions and phrases, expressions and phrases needed to chemists, mathematicians, physicists	=	
terminology. It develops communication on related topics and is aimed at correct pronunciation, grammatical correctness and unders		tais of 11
04XNM2 German for Intermediate Students M2	Z	2
The course introduces other more complex grammatical structures and their application in communication based on technical texts, such as the relation be	tween technology a	ınd society,
the world at the beginning of the 21st century, linguistically more demanding texts on the environment, the language of mathematics, computers and of the control of the co		
practise reading for information and reading aloud, and appropriate language for various purposes in oral and written communication. The course systemati- phenomena important for professional discourse (participles, relative clauses).	cally revises other gi	rammatical
04XNM3 German for Intermediate Students M3	Z	2
The course introduces other more complex grammatical structures and their application in communication based on technical texts, such as the relation be		
the world at the beginning of the 21st century, linguistically more demanding texts on the environment, the language of mathematics, computers and of		
practise reading for information and reading aloud, and appropriate language for various purposes in oral and written communication. The course systematic	cally revises other g	rammatical
phenomena important for professional discourse (participles, relative clauses).  04XNMZK German for Intermediate Students Examination	ZK	4
The course content is the examination as given by the study plan. The whole German for Intermediate Students Course is completed by an examination of	1	-
and oral, which cover the courses NM1 - NM3. The oral part follows after passing the written part successfully and after obtaining the 04NM3 assessment		
is to be obtained from the teacher.		
04XNP1   German for Advanced Students P1	Z	2
This course requires good grammar knowledge, extended general vocabulary, and good communication skills acquired at secondary school to be level course. The course is then focused on working with technical and scientific texts and practising reading techniques (skimming, scanning, reading for deciding techniques).	_	-
nore difficult grammar structures necessary for understanding a subtechnical text (passive voice, participles, participle structures) and it also focuses on practice of the control of th	•	
i.e., telephoning.		
04XNP2 German for Advanced Students P2	Z	2
The course develops the students' skills in working with professional scientific texts (understanding, summarising, note-taking, interpreting) while extending		
ocabulary range. It introduces mathematical expressions and texts of nuclear power engineering. Increasing emphasis is placed on understanding and praboth written and oral (CV, letter of application, interview, scholarship), and more complex grammatical structures (i.e., subjunctive, indi	=	nunication,
04XNP3 German for Advanced Students P3	Z	2
The course consists of 3 main parts (general communicative situations, grammar and technical topics). Students will develop their vocabulary in a variety	I I	
(traffic problems and car accidents, accident report, filling in a form, complaints). Based on presentations and technical and subtechnical texts, the voca	, ,	
nuclear power engineering, the environment, computer science, and car technology, will also be extended. Only authentic professional texts are used.	-	
students are trained to process information gained from their reading of complex and difficult texts and present it to the class in a simplified oral form. The c practice to and from German.	ourse also illiciudes	และเอเสแบก
1		

04XNPZK	German for Advanced Students Examination	ZK	4
The course conten	it is the examination as given by the study plan. The whole German for Advanced Students Course is completed by an examination c	onsisting of two pai	rts - written
and oral, which o	over the courses NP1 - NP3. The oral part follows after passing the written part successfully and after obtaining the 04NP3 ungraded	l assessment. More	e detailed
	information is to be obtained from the teacher.		
04XRM1	Russian for Intermediate Students M1	Z	2
The course is design	ned for students with previous knowledge of Russian from secondary schools. Students are supposed to know the Russian alphabet (	both printed and ha	andwritten),
-	or communication in everyday situations (introductions, socializing, greetings, shopping for food and objects of everyday need, asking		
they can use bas	sic grammar structures (verbal and nominal forms, irregular verbs, pronouns). The initial knowledge corresponds to the achievement l		urse. The
	contents and scope of the course correspond approximately to the RZ3 course, but for half of the time allotted in the timetab		
04XRM2	Russian for Intermediate Students M2	Z	2
	The course is based on the RM1 course, its contents and scope correspond roughly to RZ4, however, for half of the time allotted in the	e timetable.	
04XRM3	Russian for Intermediate Students M3	Z	2
The course develop	os the knowledge and skills acquired in RM1 and RM2 and its contents and scope are roughly at the same level as those of RZ5, howe	ver, for half of the t	ime allotted
	in the timetable.		
04XRMZK	Russian for Intermediate Students Examination	ZK	4
	It is the examination as given by the study plan. The course is completed by taking a written and oral examination testing the knowled	-	
	lents are eligible for the oral examination only after a prior pass in RM3 and a successful written examination. Students are given inst		
04XRP1	Russian for Advanced Students P1	Z	2
The entrance req	uirement for the course is to achieve the B1 CEFR level. The objective of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures, practice of the course is revision of standard language structures.	ticing more difficult	grammar
	structures, understanding the fundamentals of technical language and training writing skills.		
04XRP2	Russian for Advanced Students P2	Z	2
The course is bas	sed on RP1. It expands grammatical structures important for understanding technical texts (verbal adjectives, participles, passives, ve	rb aspects, specific	c syntactic
0.41/10.00	structures). Stress is put on independent oral and written communication.		
04XRP3	Russian for Advanced Students P3	Z	2
	ed on RP2 and is mainly focused on working with technical and scientific texts (reading comprehension, oral and written paraphrasing		
	od previous knowledge of general language at secondary level (listening, reading, correct communication in everyday situations). The	· · · · · · · · · · · · · · · · · · ·	
	er study is aimed at professional and technical skills (reading technical literature according to the students´ specialization, oral and wi chnical vocabulary and practice quick and correct communication in professional situations. They will be able to both speak write acc		
develop their subte	technical topics.	diately and with col	iliderice on
04XRPZK	Russian for Advanced Students Examination	ZK	4
	t is the examination as given by the study plan. The course is completed by taking a written and oral examination testing the knowled	l l	
	ents are eligible for the oral examination only after a prior pass in RP3 and a successful written examination. Students are given instr	-	
04XRZ1	Russian for Beginners Z1	7	2
-	ents the first stage of the five-semester programme, its final aim being reading and understanding professional texts written in Russian	ا Thus it begins with.	
	pet (for both reading and writing skills) and fundamentals of grammar necessary for everyday communication (listening and speaking		
	a short text with marked stress, understand its contents and summarize it.		
04XRZ2		Z	2
04XRZ2 The second semes	a short text with marked stress, understand its contents and summarize it.  Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte	- 1	_
The second semes	Russian for Beginners Z2	chnical texts. Stud	ents will be
The second semes	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte	chnical texts. Stud develop their voca	ents will be
The second semes	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also	chnical texts. Stud develop their voca	ents will be
The second semes able to communicate 04XRZ3	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in	echnical texts. Stud o develop their voca writing.	ents will be abulary and
The second semes able to communica 04XRZ3 The course is base	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3	chnical texts. Stud o develop their voca writing.  Z various forms of re	ents will be abulary and 2 eading skills
The second semes able to communica 04XRZ3 The course is base	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training	chnical texts. Stud o develop their voca writing.  Z various forms of re	ents will be abulary and 2 eading skills
The second semes able to communica 04XRZ3 The course is base	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be	chnical texts. Stud o develop their voca writing.  Z various forms of re	ents will be abulary and 2 eading skills
The second semes able to communicate to communicate to communicate to communicate the course is base and listening) and O4XRZ4 The course is base	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in  Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a c	echnical texts. Studio develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of	ents will be abulary and 2 eading skills o as to be 2 of unfamiliar
The second semes able to communicate to communicate to communicate to communicate the course is base and listening) and the course is base words, oral communicate to communicate the course is base words, oral communicate to communicate the course is base words, oral communicate the course is base and	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in  Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training training to spoken standing longer texts with a controllar training to spoken standing longer texts with a controllar training t	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of, differences in vertice.	ents will be abulary and 2 eading skills o as to be 2 of unfamiliar to patterns
The second semes able to communicate to communicate to communicate to communicate the course is base and listening) and the course is base words, oral communicate the course is base and the course is base words, oral communicate the course is base words.	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in  Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a control of the province of th	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of differences in verland practice oral an	ents will be abulary and 2 eading skills o as to be 2 of unfamiliar to patterns d written
The second semes able to communicate to communicate to communicate to communicate the course is base and listening) and the course is base words, oral communicate the course is base and the course is base words, oral communicate the course is base words.	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in  Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a control of the provided situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g.)	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of differences in verland practice oral an	ents will be abulary and 2 eading skills o as to be 2 of unfamiliar to patterns d written
The second semes able to communical O4XRZ3 The course is base and listening) an O4XRZ4 The course is base words, oral comm from Czech, mo communication communication of the comm	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in  Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a control in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and on more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of differences in verland practice oral an , Siberia), learn ho	ents will be abulary and  2 eading skills as to be  2 of unfamiliar to patterns d written w to fill in
The second semes able to communical O4XRZ3 The course is base and listening) an O4XRZ4 The course is base words, oral comm from Czech, mo communication communication communication communication communication communication	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a councidation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), as form more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of differences in verland practice oral an an siberia), learn ho	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in
The second semes able to communical O4XRZ3 The course is base and listening) an O4XRZ4 The course is base words, oral comm from Czech, mo communication comm	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a committee of the province of	chnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of differences in verland practice oral an and siberial, learn ho  Z g, extracting and so	ents will be abulary and 2 eading skills as to be 2 of unfamiliar to patterns d written w to fill in 2 ummarizing
The second semes able to communical of the course is base and listening) and of the course is base words, oral communication of the course expects information from a	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a commication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs adality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  as the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Committed to the professional information obtained by reading the texts.	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so Z ertain percentage of differences in verland practice oral an and significant significant contractions and significant contractions wills are contracted to the contraction of the contr	ents will be abulary and 2 eading skills as to be 2 of unfamiliar to patterns d written w to fill in 2 cummarizing e trained on
The second semes able to communical od XRZ3 The course is base and listening) an od XRZ4 The course is base words, oral communication communication of od XRZ5 The course expects information from a everyday topics. S	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a continuation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  as the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication of the studying grammar is based on professional and technical texts and only includes items typically used in professional communication of the structures and only includes items typically used in professional communication of t	echnical texts. Stude to develop their voca writing.  Z various forms of reable to respond so  Z ertain percentage of differences in verland practice oral an solution, siberial, learn ho  Z g, extracting and solutions skills are verbal adjectives, p	ents will be abulary and 2 eading skills as to be 2 of unfamiliar to patterns d written w to fill in 2 cummarizing e trained on
The second semes able to communical od XRZ3 The course is base and listening) an od XRZ4 The course is base words, oral communication communication of od XRZ5 The course expects information from a everyday topics. Sepassing	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a continuity in the expression of the procession of the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  Is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Computer of the professional and technical texts and only includes items typically used in professional communication (see voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, possional communication).	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so Z ertain percentage of differences in verland practice oral an solution, siberial, learn ho  Z g, extracting and sinunication skills are verbal adjectives, politic request, etc.)	ents will be abulary and 2 rading skills a st o be 2 rading skills of a st o be 3 rading skills of a st
The second semes able to communical od XRZ3 The course is base and listening) and od XRZ4 The course is base words, oral communication communication of od XRZ5 The course expects information from a everyday topics. Sepassive O4XRZZK	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in   Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a connication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  Is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication (we voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, pocable).	echnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so Z ertain percentage of differences in verland practice oral an and siberial, learn ho  Z g, extracting and sinunication skills are verbal adjectives, politic request, etc.)  ZK	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 rummarizing a trained on participles,
The second semes able to communicate able to communicate to communicate to course is base and listening) and the course is base words, oral communication of the course expects information from a everyday topics. Sepassive O4XRZZK.  The course conterts able to communicate to course expects information from a cou	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a connication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs) and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Common studying grammar is based on professional and technical texts and only includes items typically used in professional communication (we voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, pound of the professional skills (writing a CV, pound of the professional skills (writing a CV, pound of the	chnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respond so develop their voca writing.  Z various forms of reable to respond so able to respond so abl	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 rammarizing e trained on participles,  3 red in RZ1
The second semes able to communicate able to communicate to communicate to communicate and listening) and the course is base words, oral communication of the course expects information from a everyday topics. Severyday topics. S	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a continuitation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  Is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication (we voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, por Russian for Beginners Examination  It is the examination as given by the study plan. The	chnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respond so develop their voca writing.  Z various forms of reable to respond so able to respond so abl	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 unmarizing e trained on participles,  3 red in RZ1 her.
The second semes able to communicate able to communicate to communicate to communicate to course is base and listening) and the course is base words, oral communication of communication of the course expects information from a everyday topics. So passing O4XRZZK The course conter - RZ5. Studies of the course content - RZ5. Studies of the RZ	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a commission in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dailty, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), a more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5 s the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understandin specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Commoder texts are also trained in some professional communication (see voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, possional professional skills (writing a CV, possio	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 ummarizing a trained on participles,  3 red in RZ1 her.  2
The second semes able to communicate and listening) and O4XRZ4  The course is base words, oral communication communication of the course expects information from a everyday topics. Sepassive O4XRZZK  The course contered to course contered to course contered to course contered to course to course is designed.	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training of introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a cunication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), a more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5 is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understandin specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication (vervoice). Studying grammar is based on professional and technical texts and only includes items typically used in professional communication (vervoice). Students develop their technical and economic vocabulary, and are also trained in	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 ummarizing a trained on participles,  3 red in RZ1 her.  2 s standard
The second semes able to communicate able to communicate able to communicate able to communicate and listening) and the course is base words, oral communication of the course expects information from a everyday topics. So passing O4XRZZK able to course contermining the course contermining able to course able to communicate able to course the course contermining the course is designed.	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a continication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs adality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5 s the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication (we voice). Students develop their technical and economic vocabulary, and are also trained in some professional communication (we voice). Students develop their technical and economic vocabulary, and are also trained in some profes	chnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respond	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 unmarizing to trained on participles,  3 red in RZ1 her.  2 standard rative, and
The second semes able to communical able to communical of the course is base and listening) and the course is base words, oral communication of the course expects information from a everyday topics. So passing O4XRZZK The course conter - RZ5. Studing O4XSM1 The course is desvocabulary and pusubjunctive	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a conciliation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  Is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication to have voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, por Russian for Beginners Examination  It is the examination as given by the study plan. Th	chnical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respond	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 ummarizing a trained on participles,  3 red in RZ1 her.  2 standard rative, and em.
The second semes able to communicate able to communicate able to communicate and listening) and the course is base and listening) and the course is base words, oral communication of the course expects information from a everyday topics. Spassing O4XRZZK and Course conterminication of the course conterminication from a communication from a communication from a communication from a communication from a course conterminication from the course of the course is determining the course is determined to the cours	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a c uninciation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  It the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Commutuding grammar is based on professional and technical texts and only includes items typically used in professional communication (evoice). Students develop their technical and economic vocabulary, and are also trained in some profession	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 radin RZ1 her.  2 standard rative, and em.  2
The second semes able to communicate able to communicate able to communicate and listening) and the course is base and listening) and the course is base words, oral communication of the course expects information from a everyday topics. Spassing O4XRZZK and Course conterminication of the course conterminication from a communication from a communication from a communication from a communication from a course conterminication from the course of the course is determining the course is determined to the cours	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a conciliation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  Is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication to have voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, por Russian for Beginners Examination  It is the examination as given by the study plan. Th	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 radin RZ1 her.  2 standard rative, and em.  2
The second semes able to communical able to communical of the course is base and listening) and the course is base words, oral communication of the course expects information from a everyday topics. Spassin O4XRZZK  The course expects information from a everyday topics. Spassin O4XRZZK  The course conter - RZ5. Stud O4XSM1  The course is desvocabulary and publicative O4XSM2  The course developments of the course developmen	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will lake master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a control in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  It he student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication of grammar is based on professional and technical texts and only includes items typically used in professional communication of the examination as given by the study plan. The course is completed by taking a written and oral examinati	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 lading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 lummarizing the trained on participles,  3 red in RZ1 her.  2 s standard active, and em.  2 order to be
The second semes able to communicate able to communicate able to communicate able to communicate able to course is base and listening) and 04XRZ4 The course is base words, oral communication of communication of communication of communication of the course expects information from a everyday topics. Spassive 04XRZZK The course conterring the course conterring to course conterring to course is desvocabulary and publications of the course development of the c	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a c funcious in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5 s the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Committed for grammar is based on professional and technical texts and only includes items typically used in professional communication (we voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, power of the examination and given by the study plan. The course is completed by taking a written examination. Student	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills of as to be  2 of unfamiliar to patterns d written we to fill in  2 cummarizing the trained on participles,  3 red in RZ1 her.  2 ostandard rative, and the strive,
The second semes able to communicate and listening) and 04XRZ4 The course is base words, oral communication of communication of communication of communication of the course expects information from a everyday topics. Spassive 04XRZZK The course conterring the course conterring to conter a RZ5. Stude 04XSM1 The course is desvocabulary and publicative 04XSM2 The course development of the course development of the course development of the course books at the course books and the course books are able to course books and the course books are able to course books	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will lake master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a control in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  It he student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication of grammar is based on professional and technical texts and only includes items typically used in professional communication of the examination as given by the study plan. The course is completed by taking a written and oral examinati	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 ummarizing to trained on participles,  3 red in RZ1 her.  2 ostandard rative, and em.  2 order to be  2 ocompetent
The second semes able to communicate and listening) and 04XRZ4 The course is base words, oral communication of communication of communication of communication of the course expects information from a everyday topics. Spassive 04XRZZK The course conterring the course conterring to conter a RZ5. Stude 04XSM1 The course is desvocabulary and publicative 04XSM2 The course development of the course development of the course development of the course books at the course books and the course books are able to course books and the course books are able to course books	Russian for Beginners Z2  ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3  d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4  d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a cuncication in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs in more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5  is the student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understandin specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Computing grammar is based on professional and technical texts and only includes items typically used in professional communication (every orice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, pc. Purifrasis verbales, future in professional information. Students are given instread of the students whose comp	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 ummarizing to trained on participles,  3 red in RZ1 her.  2 ostandard rative, and em.  2 order to be  2 ocompetent
The second semes able to communicate and listening) and 04XRZ4 The course is base words, oral communication of communication of communication of communication of the course expects information from a everyday topics. Spassive 04XRZZK The course conterring the course conterring to conter a RZ5. Stude 04XSM1 The course is desvocabulary and publicative 04XSM2 The course development of the course development of the course development of the course books at the course books and the course books are able to course books and the course books are able to course books	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a councilation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), a namore specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g. forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5 sthe student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understanding vervice). Students develop their technical and technical texts and only includes items typically used in professional communication vervice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, por Russian for Beginners Examination  It is the examination as given by the study plan. The course is completed by	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and  2 rading skills as to be  2 of unfamiliar to patterns d written w to fill in  2 ummarizing to trained on participles,  3 red in RZ1 her.  2 ostandard rative, and em.  2 order to be  2 ocompetent
The second semes able to communicate and listening) and 04XRZ4 The course is base words, oral communication of communication of communication of communication of the course expects information from a everyday topics. Suppose the course conterment of the course conterment of the course is desvocabulary and publicative of the course development of the course development of the course development of the course books are nough to use the other communication.	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte te using short sentences and appropriate structures, and read aloud with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a c uniciation in everyday situations, writing longer texts). Students are trained to use grammar structures effectively (e.g., irregular verbs dality, imperatives, conditionals). They practice and develop communication skills for everyday situations (food, travelling, free time), and more specific topics (environment, addictions, the green movement). They become acquainted with various geographical data (e.g., forms, look up the information from the timetable, learn about Russian holidays and typical meals.  Russian for Beginners Z5 stite student to have completed RZ4. It concentrates predominantly on reading skills (working with professional texts, i.e. understandin specialized text) and speaking, and to a certain extent, writing about the professional information obtained by reading the texts. Communication of the voice). Students develop their technical and economic vocabulary, and are also trained in some professional skills (writing a CV, pc Russian for Beginners Examination  It is the examination as given by the study plan. The course is completed by taking a written and oral examination testing the knowled enters are eligible for the oral examination only afte	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and 2 pading skills of as to be 2 of unfamiliar to patterns d written written written written are trained on participles, 3 red in RZ1 her. 2 order to be 2 order to be 2 order to be 2 order to be 4
The second semes able to communicate and listening) and 04XRZ4 The course is base words, oral communication of communication of communication of communication of the course expects information from a everyday topics. Suppose the course conterment of the course conterment of the course is desvocabulary and publicative of the course development of the course development of the course development of the course books are nough to use the other communication.	Russian for Beginners Z2 ster of the programme is designed to teach skills for basic communication in everyday situations and for reading easy and short subte to using short sentences and appropriate structures, and read aloud with confidence a short text without marked stress. They will also master further grammatical structures. They will have mastered with confidence the Russian alphabet and will be able to use it in Russian for Beginners Z3 d on RZ2 and includes further everyday topics, develops understanding of short compact texts on new subtechnical topics (for training d introduces new grammar. Students will be trained to distinguish intonation patterns while listening to spoken language. They will be understood, and to express their opinion. Writing skills will be trained on guided writing tasks and note-taking.  Russian for Beginners Z4 d on RZ3. It improves and expands the knowledge of general language in all four skills (reading and understanding longer texts with a contract of the contract of th	chinical texts. Stude of develop their voca writing.  Z various forms of reable to respond so able to respon	ents will be abulary and 2 pading skills of as to be 2 of unfamiliar to patterns d written written written written are trained on participles, 3 red in RZ1 her. 2 order to be 2 order to be 2 order to be 2 order to be 4

04XSP1	Spanish for Advanced Students P1	Z	2
Course concentrat	es on more difficult grammar topics, revision of vocabulary, basics of Spanish for specific purposes as well as written communication. of CEFR.	Course prerequisi	tes: level B2
04XSP2	Spanish for Advanced Students P2	Z	2
Course XSP2 is the	e second part of the advanced Spanish course, extending Spanish for specific purposes topics. It comprises more grammar and synta written communication.	x and focuses on i	independent
04XSP3	Spanish for Advanced Students P3	Z	2
Course XSP3 is the	e final part of the advanced Spanish course. It is based on texts chosen by the students according to their future specialization. It is focu based on what students will need in their career.	used on written cor	nmunication
04XSPZK	Spanish for Advanced Students Examination	ZK	4
	ent is the examination as given by the study plan. Examination XSPZK consists of two parts, namely oral and written. The prerequisite ing passed the written test. Examination content is based on syllabi of courses XSP1, XSP2, and XSP3 or on an individual study plar		oral part is
04XSZ1	Spanish for Beginners Z1	Z	2
Course XSZ1 is th	te first stage of the five-semester programme of Spanish studies; during the first stage the students will master phonetics and fundamentation communicate at an elementary level on topics of everyday life. They will acquire and extend fundamental vocabulary of general Spanish.	ı ıental grammar str	uctures and
04XSZ2	Spanish for Beginners Students Z2	Z	2
	ased on course XSZ1, and expects students to develop and extend the knowledge and skills acquired so far. Grammar structures an	_	1
	nderstand short adapted written texts and speech. Attention is also paid to cultural differences between Spanish-speaking countries a		
	Republic. Realia of Spanish-speaking countries are also included.		
04XSZ3	Spanish for Beginners Z3	Z	2
	s upon the foundations established in course XSZ2 and further develops students vocabulary and grammatical competence. It includes		
	t of Spanish-speaking countries, with a primary focus on Spain. Particular attention is given to key grammatical structures, including		
indefinido, preterit	o imperfecto, the gerund, and the imperative. The course also focuses on both written and spoken communication on general topics.	Students are prepa	ared for this
047674	through targeted reading and listening activities.	7	2
04XSZ4	Spanish for Beginners Z4 and on course XSZ3. It develops the student's vocabulary and extends the knowledge of the culture and social customs of the Spanish	<b>∠</b> speaking countrie	_
	ntion to further grammar topics (perifrasis verbales, futuro imperfecto, direct object and indirect object pronouns, negative form of the	· -	
.,	to written and oral communication on a given general or subtechnical topic, for which the student is trained by reading texts or listeni	· ·	, ,
04XSZ5	Spanish for Beginners Z5	Z	2
The course books	are supplemented with additional subtechnical materials, so the students will be gradually acquainted with peculiarities of Spanish for	r specific purpose	s. In its final
	part, the general Spanish course based on the course book will end with a written and oral examination.		
04XSZZK	Spanish for Beginners Examination	ZK	3
The course cont	ent is the examination as given by the study plan. Examination consists of two parts - written and oral. Student can register for oral ex	amination only if h	ie/she has
0.4)/4.51	passed the written examination test.		
	Dunana 4-41 On 1997	7	_
04YAPI	Presentation Course	Z	2
The course will pre	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes	discussions (expre	ssing views,
The course will pre	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af	discussions (expre ter the presentation	ssing views,
The course will pre	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing	discussions (expre ter the presentation	ssing views,
The course will pre comments, agreen 12VTV	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af	discussions (expreter the presentation g a paper.	ssing views, n, which is a
The course will pre comments, agreen 12VTV	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing Scientific and Technical Computing	discussions (exprediscussions)  g a paper.  Z  ming. The course	ssing views, n, which is a
The course will pre comments, agreen 12VTV The students get 12YNME1	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affect skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1	discussions (expreter the presentation g a paper.  Z ming. The course	ssing views, n, which is a  2 is oriented
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affected in the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.    Numerical Methods 1	discussions (expreter the presentation g a paper.  Z ming. The course  Z,ZK thods for solution of	ssing views, n, which is a  2 is oriented  4 of tasks very
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affixill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations	discussions (expreter the presentation g a paper.  Z ming. The course  Z,ZK thods for solution of	ssing views, n, which is a  2 is oriented  4 of tasks very
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for physical comments with the comments of the comments of the comments of the course o	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affixill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing and familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their programmainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.	discussions (expreter the presentation g a paper.  Z ming. The course  Z,ZK thods for solution clional environment	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for phys	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affixill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing and familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their programmainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python	discussions (expreter the presentation g a paper.  Z aming. The course  Z,ZK thods for solution clional environment	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for phys 12YPYTH The aim of this course	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affixing required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computated used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is placed.	discussions (expreter the presentation g a paper.  Zuming. The course  Z,ZK thods for solution clional environment  Z ed on effective solutions course	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for phys 12YPYTH The aim of this couproblems. The co	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affixill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing and familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their programmainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python	discussions (expreter the presentation g a paper.  Zuming. The course  Z,ZK thods for solution cional environment  Z ed on effective solunt theses. Students	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real s are also
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for phys 12YPYTH The aim of this couproblems. The coinvolved in ongoi	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affixing required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computed used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is placed ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude	discussions (expreter the presentation g a paper.  Zuming. The course  Z,ZK thods for solution cional environment  Z ed on effective solunt theses. Students functional program	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real s are also nming. The
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for phys 12YPYTH The aim of this couproblems. The couproblems. The couproled in ongoing greater part of the	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affiskill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is placed ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or studeing research. In the introductory part of the course, students learn the basic features of Python? From basic types to object oriented or ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.	discussions (expreter the presentation g a paper.  Zuming. The course  Z,ZK thods for solution cional environment  Z ed on effective solunt theses. Students functional program	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real s are also are also oriented orgaphics
The course will pre comments, agreen 12VTV The students get 12YNME1 There are explaine important for phys 12YPYTH The aim of this couproblems. The cinvolved in ongoi greater part of th 12YUNXAP	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affiskill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing and the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  In the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Methods (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  Interest to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is placed ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or studeing research. In the introductory part of the course, students learn the basic features of Python? From basic types to object oriented or the course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX	discussions (expreter the presentation g a paper.  Z ming. The course  Z,ZK thods for solution or ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlik	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real as are also as are also oriented orgaphics
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing greater part of the computer and computer a	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affiskill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  In the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computated used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  are is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is placed ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude and research. In the introductory part of the course, students learn the basic features of Python?from basic types to object oriented or ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX  perental generation and supercomputers. Processor, memory, bus, devices, hard disk, network interface.	discussions (expreter the presentation g a paper.  Z Iming. The course  Z,ZK thods for solution cional environment  Z ed on effective solunt theses. Students functional program and the Matplotlik  Z ce. Hardware and	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real are also nming. The organics  2 software.
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and of the principles of operations.	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affiskill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing.    Scientific and Technical Computing	discussions (expreter the presentation g a paper.  Z Iming. The course  Z,ZK thods for solution of ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib  Z ce. Hardware and th files. Text editors	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real are also nming. The organics  2 software. s: vi, emacs.
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and computer and compand interprecomments.	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affiskill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a Scientific and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  did the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computated used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude and research. In the introductory part of the course, students learn the basic features of Python?from basic types to object oriented or ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX  perating systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfating systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working with teet (shell) bash and its programm	discussions (expreter the presentation g a paper.  Z Iming. The course  Z,ZK thods for solution of ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib  Z ce. Hardware and th files. Text editorsools. Graphical use	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real is are also inming. The polygraphics  2 software. s: vi, emacs. er interface
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and computer and compand interprecomments.	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affecting skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing the structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing and the basic principle program of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  Introduction to UNIX  Departing systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfacting systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working with reputer networks. Local computer networks. Global computer networks. Addresses and protocols TCP/IP. Network configutation of a computer networks. Local computer networks. Global computer networks. Addresses and protocols TCP/IP. Network configutation of a computer networks. Controlling processes, process status, computer load a process priorities.	discussions (expreter the presentation g a paper.  Z Iming. The course  Z,ZK thods for solution of ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib  Z ce. Hardware and th files. Text editorsools. Graphical use	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real is are also inming. The polygraphics  2 software. s: vi, emacs. er interface
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and computer and compand interprecomments.	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing and technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  In the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Methods 1  Scientific Programming in addition to the basic numerical methods. Integrated computat used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  In the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude and research. In the introductory part of the course, students learn the basic features of Python? from basic types to object oriented or ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX  Deperating systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfacting systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working with reter (shell) bash and its programming (scripts). Controlling processes, process status, computer lo	discussions (expreter the presentation g a paper.  Z Iming. The course  Z,ZK thods for solution of ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib  Z ce. Hardware and th files. Text editorsools. Graphical use	ssing views, n, which is a  2 is oriented  4 of tasks very MATLAB is  2 utions to real is are also inming. The polygraphics  2 software. s: vi, emacs. er interface
The course will precomments, agreent 12VTV The students get 12YNME1 There are explained important for physical 12YPYTH The aim of this couproblems. The coinvolved in ongoing reater part of the 12YUNXAP Computer and of Principles of operation Command interprocess. Command interprocess.	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them affecting skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing the structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing and the basic principle program of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  Introduction to UNIX  Departing systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfacting systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working with reputer networks. Local computer networks. Global computer networks. Addresses and protocols TCP/IP. Network configutation of a computer networks. Local computer networks. Global computer networks. Addresses and protocols TCP/IP. Network configutation of a computer networks. Controlling processes, process status, computer load a process priorities.	discussions (expreter the presentation of the presentation of a paper.  Z mining. The course Z,ZK thods for solution of the course do not environment Z and the Matplotlib Z ce. Hardware and the files. Text editors only. Graphical use omputer. Network	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real s are also ming. The pographics 2 software. s: vi, emacs. er interface services: 4
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and computer	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes then, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing the skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project and rules for writing skill required for the defence of their program mainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Meticists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computer as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude to greater the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of ot	discussions (expreter the presentation of the presentation of a paper.  Zuming. The course  Z,ZK thods for solution of the presentation of the pre	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real s are also ming. The p graphics 2 software. s: vi, emacs. er interface services: 4 rption; gas isplacement
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and computer	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic part and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Metaback principles of numerical mathematics important for numerical solving of problems important for physics and technology. Metaback principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or students greater. In the introductory part of the course, students learn the basic features of Python? From basic types to object oriented or ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with ot	discussions (expreter the presentation g a paper.  Z mining. The course  Z,ZK thods for solution or ional environment  Z ed on effective solution theses. Students functional program and the Matplotlib  Z ce. Hardware and the files. Text editors cols. Graphical use omputer. Network  KZ ce; sorption, description pumps, Sublir edition pumps, Sublir edit	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real is are also ming. The properties of graphics 2 software. So interface services: 4 4 rption; gas isplacement mation and
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of the students of the computer and computer	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.    Numerical Methods 1	discussions (expreter the presentation g a paper.  Z mining. The course  Z,ZK thods for solution or ional environment  Z ed on effective solution theses. Students functional program and the Matplotlib  Z ce. Hardware and the files. Text editors cols. Graphical use omputer. Network  KZ ce; sorption, description pumps, Sublir edition pumps, Sublir edit	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real is are also ming. The properties of graphics 2 software. So interface services: 4 4 rption; gas isplacement mation and
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing greater part of the computer and of	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a scientific and Technical Computing and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Meticists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computat used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX  poperating systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfacting systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working with the programming (scripts). Controlling processes, process status, computer load a process priorities. Standard to the programming and their programmi	discussions (expreter the presentation of the presentation of a paper.  Z mining. The course  Z,ZK thods for solution of the presentation of the p	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real s are also ming. The p graphics 2 software. s: vi, emacs. er interface services: 4 rption; gas isplacement mation and components
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing reater part of th  12YUNXAP Computer and of Principles of operatory command interprinciples of operatory commend interprinciples of peratory commend interprinciples of operatory commendations. The commendation is a commendation of the commendation of	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a scientific and Technical Computing and the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.    Numerical Methods 1	discussions (expreter the presentation graph apper.  Zuming. The course  Z,ZK thods for solution or ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib.  Z ce. Hardware and th files. Text editors ools. Graphical use omputer. Network  KZ ce; sorption, desorperties:-Positive dittion pumps, Sublirials and vacuum of Z,ZK	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real s are also nming. The p graphics 2 software. s: vi, emacs. er interface services: 4 rption; gas isplacement mation and components 3
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing greater part of th  12YUNXAP Computer and of Principles of operatory command interprious command	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a scientific and Technical Computing and Technical Computing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  d the basic principles of numerical mathematics important for numerical solving of problems important for physics and technology. Meticists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computat used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  urse is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX  poperating systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfacting systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working with the programming (scripts). Controlling processes, process status, computer load a process priorities. Standard to the programming and their programmi	discussions (expreter the presentation graph apper.  Zuming. The course  Z,ZK thods for solution or ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib.  Z ce. Hardware and th files. Text editors ools. Graphical use omputer. Network  KZ ce; sorption, desorperties:-Positive dittion pumps, Sublirials and vacuum of Z,ZK various examples,	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real is are also ming. The properties of graphics 2 software. So interface services: 4 4 rption; gas isplacement mation and components 3 the fact that
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing greater part of th  12YUNXAP Computer and of Principles of operatory command interprious command	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement), Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing the project of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing the program for the state of the stat	discussions (expreter the presentation graph apper.  Zuming. The course  Z,ZK thods for solution or ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib.  Z ce. Hardware and th files. Text editors ools. Graphical use omputer. Network  KZ ce; sorption, desorperties:-Positive dittion pumps, Sublirials and vacuum of Z,ZK various examples,	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real is are also ming. The properties of graphics 2 software. So interface services: 4 4 rption; gas isplacement mation and components 3 the fact that
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing greater part of th  12YUNXAP Computer and of Principles of operatory command interprious command	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them aff skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing a skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing familiar with methods of solving of computational problems in the scientific and technical practice, and with methods of their program mainly to programming in the Fortran language.  Numerical Methods 1  diversity of problems important for physics and technology. Medicists (ordinary differential equations, random numbers) are included in addition to the basic numerical methods. Integrated computations used as a principle programming language as a demonstration tool. The seminars are held in computer laboratory.  Scientific Programming in Python  rise is to learn the fundamentals of the modern Python programming language with a focus on scientific computing. Emphasis is place ourse is performed in an interactive form of practical exercises, whose topics can be tailored to the content of other subjects or stude and research. In the introductory part of the course, students learn the basic features of Python?from basic types to object oriented or ne course focuses on specific features of Python for scientific programming. Presented are the main numerical libraries NumPy, SciPy library. We show how to generate efficient code, how to combine Python with other languages, what tools are available.  Introduction to UNIX  poperating systems. Personal computer, workstation and supercomputers. Processor, memory, bus, devices, hard disk, network interfating systems. Operating system UNIX. Basic principles, kernel, kernel services. Documentation. File system, file atributes, working wi	discussions (expreter the presentation graph apper.  Zuming. The course  Z,ZK thods for solution or ional environment  Z ed on effective solunt theses. Students functional program and the Matplotlib.  Z ce. Hardware and th files. Text editors ools. Graphical use omputer. Network  KZ ce; sorption, desorperties:-Positive dittion pumps, Sublirials and vacuum of Z,ZK various examples,	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real is are also ming. The properties of graphics 2 software. So interface services: 4 4 rption; gas isplacement mation and components 3 the fact that
The course will precomments, agreen  12VTV The students get  12YNME1 There are explaine important for phys  12YPYTH The aim of this couproblems. The cinvolved in ongoing greater part of th  12YUNXAP Computer and of Principles of operator Command interprior X-windows. Corresponding the company of the computer and of the compu	pare students for presenting issues in their field by mastering the strategies and techniques of oral presentation. The course includes nent, disagreement). Students will be able to respond to comments on their presentation and answer questions addressed to them af skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writin Skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writin Skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writin Skill required for the defence of the Bachelor Project. Students will learn the basic structure of a Bachelor Project and rules for writing and the state of the project and the state of the structure of the state of the state of the project and the state of the project and the state of the course of the state	discussions (expreter the presentation of the presentation of a paper.  Z ming. The course  Z,ZK thods for solution of ional environment  Z end on effective solunt theses. Students functional program of and the Matplotlib of the presentation of t	ssing views, n, which is a 2 is oriented 4 of tasks very MATLAB is 2 utions to real s are also ming. The p graphics 2 software. s: vi, emacs. er interface services: 4 rption; gas isplacement mation and components 3 the fact that nples solved 3

17YUING	Introduction to Engineering	KZ	3
This course provid	es introduction to engineering skills. Students should gain general engineering skills at basic level (e.g. material properties and beha	vior, basics of ma	nufacturing
i	and production, quality assurance, environmental impacts,). In addition, the introduction to scientific work and technical drawing will b	e included.	
17YZEL	Basics of Electronics	KZ	3
Lectures provide b	asic information of electronics. In the beginning, lectures are devoted to passive components - resistors, capacitors, inductors and so	lution of electrical	circuits with
them. Next, lecture	s deal with semiconductor components (standard, Zener, capacitive, LED), bipolar, unipolar transistors and semiconductor compone	nts with more laye	rs (thyristors
and triacs). Lectu	ires continue with general amplifiers and operational amplifiers. Finally, lectures deal with digital circuits, digital/analog and analog/dig	gital converters. Le	ectures are
	completed with electronic laboratory exercises.		
18NES1	Neural Networks 1	KZ	5
The aim of the co	ourse "Neural Networks 1" is to acquaint students with basic models of artificial neural networks, algorithms for their learning, and oth	ner related machir	e learning
	techniques. The goal is to teach students how to apply these models and methods to solve practical tasks.		
18YPRC1	Programming in C++ 1	Z	4
	This course covers mainly the C programming language and non-object oriented features of the C++ language.	•	
18YPRC2	Programming in C++ 2	KZ	4
This co	ourse covers the object oriented programming and othesr advanced constructs in the C+;+ programming language and the Standard	Template Library.	'
18YZALG	Basics of Algorithmization	Z,ZK	4
This course is	devoted to selected algorithms and methods for algorithm design. This course intruduces selected methods for the determination of	the algorithm con	plexity.
18YZPRO	Basics of Programming	Z	4
This course is in	ntended mainly for students with little or no experience in programming. It familiarizes the students with the basic concepts in prograr	nming and with th	e Python
	programming language.		
TV-1	Physical Education	Z	1
TV-2	Physical Education	Z	1
TV-3	Physical education	Z	1
TV-4	Physical education	Z	1

For updated information see <a href="http://bilakniha.cvut.cz/en/FF.html">http://bilakniha.cvut.cz/en/FF.html</a> Generated: day 2025-08-09, time 07:39.