Czech Technical University in Prague

Curricula 2017-2018

Faculty of Nuclear Sciences and Physical Engineering

FACULTY OF NUCLEAR SCIENCES AND PHYSICAL ENGINEERING CZECH TECHNICAL UNIVERSITY IN PRAGUE

The Faculty of Nuclear Sciences and Physical Engineering (FNSPE) was established in 1955, as part of the Charles University, but in 1959 became a new special faculty of the Czech Technical University in Prague. The establishment of the Faculty was connected with the beginning of a new era of the peaceful use of nuclear energy. A complex approach to all nuclear branches was intended, so specialists from universities, technological institutions, and industry were brought together to comply with this task. Later, newly developed areas of physics application, e.g. plasma and solid state physics, lasers, cosmic research were included in the Faculty curricula.

The characteristics of the Faculty activities developed during its history, and the most advanced areas of technological progress have always attracted its attention. Students with a special interest in mathematics were taught individually, and, subsequently, the study of mathematical engineering was established. In the last fifteen years the rapidly developing branches of mathematical and software engineering, interdisciplinary application to ecology, medicine, economy, archeology have been also evolved. The Faculty is equipped with several large research facilities, such as the VR-1 training nuclear reactor, scanning electron microscopes, high power laser systems, computational and advanced radiochemical laboratories, and satellite laser ranging station (Helwan, Egypt).

ANNUAL ACADEMIC CALENDAR 2017 – 2018

Beginning of academic year	Oct 1 2017
End of academic year	Sep 30 2018

Enrollment

Sep 4 – 6 2017	1st year of bachelor's programme
Sep 12 – 14, 19 – 21, 26, 27 2017	higher years
Sep 25 – 27 2017	preparatory week for new bachelor students

Winter semester

Oct 3 2017	Commencement Ceremony for new students
Oct 2 2017 – Jan 5 2018	scheduled classes (13 weeks)
Dec 23 2017 – Jan 1 2018	winter holidays
Jan 8 2018 – Feb18 2018	examination period
until Nov 30 2017	applications for February final examinations
until Jan 8 2018	theses submission for February final examinations
until Jan 23 2018	closure of results for February final examinations
Feb 5 – Feb 16 2018	February final examinations

Summer semester

Feb 1 – 15 2018	enrollment to summer semester
Feb 19 – May 18 2018	scheduled classes (13 weeks)
May 21 – Jul 1 2018	examination period
Jul 2 – Sep 2 2018	summer holidays
Sep 3 – Sep 30 2018	extended examination period
until Mar 31 2018	applications for June final examinations
until May 7 2018	theses submission for June final examinations
until May 24 2018	closure of results for June final examinations
until May 31 2018	applications for September final examinations
until Jul 9 2018	theses submission for September final examinations
until Aug 15 2018	closure of results for September final examinations
Jun 4 – 15 2018	June final examinations
Aug 27 – Sep 7 2018	September final examinations
Oct 24 2017 and Jun 28 2018	Graduation Days
May 16 2018	Rector's Day

LIST OF DEPARTMENTS

department	abbreviation	code
Department of Mathematics	KM	01
Department of Physics	KF	02
Department of Languages	KJ	04
Department of Solid State Engineering	KIPL	11
Department of Physical Electronics	KFE	12
Department of Materials	KMAT	14
Department of Nuclear Chemistry	KJCH	15
Department of Dosimetry and Application of Ionising Radiation	KDAIZ	16
Department of Nuclear Reactors	KJR	17
Department of Software Engineering	KSI	18

DEGREE PROGRAM STRUCTURE

FIELDS OF STUDY AND GRADUATE PROFILES

BACHELOR'S DEGREE PROGRAM

APPLICATION OF NATURAL SCIENCES

The program is taught in Czech only

degree	code	abbreviation	time extent
Mathematical Engineering	3901R021	MI	3
Mathematical Informatics	3901R058	MINF	3
Computational Physics	3901R065	IF	3
Applications of Software Engineering	3901R056	ASI	3
Applied Informatics	3901R057	APIN	3
Nuclear Engineering	3901R016	JI	3
Dosimetry and Applications of Ionising Radiation	3901R060	DAIZ	3
Experimental Nuclear and Particle Physics	3901R061	EJCF	3
Radiological Technology	3901R033	RT	3
Solid State Engineering	3901R066	IPL	3
Diagnostics of Materials	3901R059	DM	3
Physics and Technology of Thermonuclear Fusion	3901R062	FTTF	3
Physical Electronics	3901R063	FE	3
Laser and Instrument Technology	3901R067	LPT	3
Physical Technology	3901R064	FYT	3
Nuclear Chemistry	3901R072	JCH	3

MASTER'S DEGREE PROGRAM

APPLICATION OF NATURAL SCIENCES

The program is taught in Czech and English

degree	code	abbreviation	time extent
Mathematical Engineering	3901T021	MI	2
Mathematical Physics	3901T069	MF	2
Applied Mathematical Stochastic Methods	3901T068	AMSM	2
Mathematical Informatics	3901T058	MINF	2
Computational Physics	3901T065	IF	2
Applications of Software Engineering	3901T056	ASI	2
Nuclear Engineering	3901T016	JI	2
Dosimetry and Applications of Ionising Radiation	3901T060	DAIZ	2
Experimental Nuclear and Particle Physics	3901T061	EJCF	2
Radiological Physics	3901T034	RF	2
Solid State Engineering	3901T066	IPL	2
Diagnostics of Materials	3901T059	DM	2
Physics and Technology of Thermonuclear Fusion	3901T062	FTTF	2
Laser Technology and Electronics	3901T070	LTE	2
Optics and Nanostructures	3901T071	ON	2
Nuclear Chemistry	3901T072	JCH	2

MASTER’S DEGREE PROGRAM

Master's Degree Program

Mathematical Engineering

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Variational Methods	01VAM	Beneš	2 zk	-	3	-
Functional Analysis 3	01FA3	Havlíček	2+1 z, zk	-	3	-
Introduction to Graph Theory	01ZTG	Ambrož	4+0 zk	-	4	-
Advanced Methods of Numerical Linear Algebra	01PNLA	Mikyška	2+0 zk	-	3	-
Matrix Theory	01TEMA	Pelantová	2+0 z	-	3	-
Theory of Random Processes	01NAH	Hobza	3+0 zk	-	3	-
Asymptotical Methods	01ASY	Mikyška	-	2+1 z, zk	-	3
Finite Element Method	01MKP	Beneš	-	2 zk	-	3
Research Project 1, 2	01VUMM12	Hobza	0+6 z	0+8 kz	6	8
Optional courses:						
Dynamic Decision Making 1	01DRO1	Guy, Kárný	-	2+0 zk	-	2
Modern Theory of Partial Differential Equations	01PDR	Tušek	-	2+0 zk	-	2
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Image Processing and Pattern Recognition 1	01ROZ1	Flusser, Zitová	-	2+2 zk	-	4
Diagnostic Signal Analysis and Processing	01ZASIG	Převorovský	-	3+0 zk	-	3
Quantum Physics	01KF	Havlíček	-	4+2 z, zk	-	6
Differential Equations on Computer	12DRP	Liska	2+2 z, zk	-	5	-
Neural Networks and their Application	01NEUR1	Hakl, Holeňa	-	2+0 zk	-	2
Logic for Mathematicians	01LOM	Cintula	-	2+0 zk	-	2
Information Theory	01TIN	Hobza	2+0 zk	-	2	-
Regression Data Analysis	01REAN	Franc, Víšek	2+2 z, zk	-	4	-
Probabilistic Models of Artificial Intelligence	01UMIN	Vejnarová	2+0 kz	-	2	-
Complexity Theory	01TSLO	Majerech	3+0 zk	-	3	-
Parallel Algorithms and Architectures	01PAA	Oberhuber	-	3 kz	-	4
Advanced algorithmization	01PALG	Oberhuber	2 kz	-	2	-
Applications of Statistical Methods	01ASM	Hobza	-	2+0 kz	-	2
Mathematical Methods in Fluid Dynamics 1, 2 (1)	01MMDT12	Fořt, Neustupa	2+0 z	2+0 zk	2	2
Number Theory	01TC	Masáková, Pelantová	-	4+0 zk	-	4
Aperiodic Structures 1, 2	01APST12	Masáková	2+0 z	2+0 z	2	2
Differential Calculus on Manifolds	01DPV	Tušek	-	2+0 zk	-	2
Mathematical Methods in Biology and Medicine	01MBI	Klika	2+1 kz	-	3	-
Gemoetrical Aspects of Spectral Theory	02SPEC	Krejčiřík	-	2+0 zk	-	2
Database System Decomposition	18DATS	Kukal	-	2+2 kz	-	4
Financial and Insurance Mathematics	01FIMA	Hora	2+0 zk	-	2	-
Lie Algebras and Lie Groups	02LIAG	Šnobl	-	3+2 z, zk	-	6
Object Oriented Programming	18OOP	Virius	0+2 z	-	2	-
Student Scientific Conference	01SVK	Mikyška	-	5 dní z	-	1

(1) The contents is linked to an optional subject within the final state examination.

Master's Degree Program

Mathematical Engineering

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Nonlinear Programming	01NELI	Burdík	3+0 zk	-	4	-
Mathematical Modelling of Non-linear Systems	01MMNS	Beneš	2 zk	-	3	-
Diploma Seminar	01DSEMI	Ambrož	-	0+2 z	-	3
Master Thesis 1, 2	01DPMM12	Ambrož	0+10 z	0+20 z	10	20
Optional courses:						
Methods for Sparse Matrices	01MRM	Mikyška	2+0 zk	-	2	-
Numerical Software	01NUSO	Fürst	2+0 z	-	3	-
Dynamic Decision Making 2	01DRO2	Guy, Kárný	2+0 zk	-	2	-
Mathematical Logic	01MAL	Cintula	2+1 z, zk	-	4	-
Theoretical Bases of Neural Networks	01NEUR2	Hakl, Holeňa	2+0 zk	-	3	-
Probabilistic Learning Models	01PMU	Hakl	2+0 zk	-	2	-
Stochastic Methods	01STOM	Franc	2+0 kz	-	2	-
Image Processing and Pattern Recognition 2	01ROZP2	Flusser	2+1 zk	-	4	-
Method of Finite Volumes	01MKO	Beneš	1+1 kz	-	2	-
Special Functions and Transformations in Image Analysis	01SFTO	Flusser	-	2+0 zk	-	2

Master's Degree Program

Mathematical Physics

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Quantum Field Theory 1	02KTP1	Hořejší	4+2 z, zk	-	9	-
Groups and Representations	02GR	Chadzitaskos	2+1 z, zk	-	3	-
Quantum Physics	01KF	Havlíček	-	4+2 z, zk	-	6
Geometric Methods in Physics 2	02GMF2	Tolar	-	2+2 z, zk	-	5
Lie Algebras and Lie Groups	02LIAG	Šnobl	-	3+2 z, zk	-	6
Winter School of Mathematical Physics (1)	02ZS	Tolar	1 týden z	-	1	-
Research Project 1, 2	02VUMF12	Hlavatý, Tolar	0+6 z	0+8 kz	6	8
Optional courses:						
Quantum Field Theory 2	02KTP2	Hořejší	-	4+2 z, zk	-	6
Quantum Information and Communication	02KIK	Jex	2+0 z	-	2	-
Functional Analysis 3	01FA3	Havlíček	2+1 z, zk	-	3	-
Asymptotical Methods	01ASY	Mikyška	-	2+1 z, zk	-	3
Theory of Random Processes	01NAH	Hobza	3+0 zk	-	3	-
Variational Methods	01VAM	Beneš	2 zk	-	3	-
Advanced Topics of Quantum Theory	02PPKT	Exner	-	2+0 zk	-	2
Relativistic Physics 1	02REL1	Bičák, Semerák	4+2 z, zk	-	6	-
Relativistic Physics 2	02REL2	Bičák, Semerák	-	4+2 z, zk	-	6
Introduction to Graph Theory	01ZTG	Ambrož	4+0 zk	-	4	-
Quantum Circle 1, 2	02KVK12	Exner	0+2 z	0+2 z	2	2
Solvable Models of Mathematical Physics (2)	02RMMF	Hlavatý	-	2+0 z	-	2
Introduction to Strings 1, 2 (2)	02UST12	Hlavatý	2+1 z	2+1 z	3	3
Open Quantum Systems	02OKS	Novotný	-	2+0 z	-	2

(1) The course is devoted for the students of this field only.
(2) These courses are altrernatively open according to the announcement of the department.

Master's Degree Program

Mathematical Physics

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Cohomological Methods in Theoretical Physics	02KOHOM	Tolar	2 zk	-	5	-
Selected Topics in Statistical Physics and Thermodynamics	02VPSF	Jex	2+2 z, zk	-	7	-
Master Thesis 1, 2	02DPMF12	Hlavatý, Tolar	0+10 z	0+20 z	10	20
Optional courses:						
Relativistic Physics 1	02REL1	Bičák, Semerák	4+2 z, zk	-	6	-
Relativistic Physics 2	02REL2	Bičák, Semerák	-	4+2 z, zk	-	6
Quantum Information and Communication	02KIK	Jex	2+0 z	-	2	-
Quantum Groups 1	01KVGR1	Burdík	2+0 z	-	2	-
Mathematical Modelling of Non-linear Systems	01MMNS	Beneš	2 zk	-	3	-
Quantum Circle 1, 2	02KVK12	Exner	0+2 z	0+2 z	2	2
Introduction to Graph Theory	01ZTG	Ambrož	4+0 zk	-	4	-
Solvable Models of Mathematical Physics (1)	02RMMF	Hlavatý	-	2+0 z	-	2
Introduction to Strings 1, 2 (1)	02UST12	Hlavatý	2+1 z	2+1 z	3	3
Gemoetrical Aspects of Spectral Theory	02SPEC	Krejčiřík	-	2+0 zk	-	2
Coxeter Groups	02COX	Hrivnák	2+0 z	-	2	-

(1) These courses are altrernatively open according to the announcement of the department.

Master's Degree Program

Applied Mathematical Stochastic Methods

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Information Theory	01TIN	Hobza	2+0 zk	-	2	-
Dynamic Decision Making 1	01DRO1	Guy, Kárný	-	2+0 zk	-	2
Mathematical Models of Traffic Systems	01MMDS	Krbálek	-	2+2 z, zk	-	4
Theory of Random Processes	01NAH	Hobza	3+0 zk	-	3	-
Generalized Linear Models and Applications	01ZLIM	Hobza, Víšek	-	2+1 zk	-	3
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Selected Topics in Functional Analysis	01VPF	Šťovíček	2+2 z, zk	-	4	-
System Reliability and Clinical Experiments	01SKE	Kůs	-	2+0 kz	-	3
Bayesian Principles in Statistics	01BAPS	Kůs	3+0 zk	-	3	-
Modelling of Extreme Events	01MEX	Krbálek, Kůs	-	2+0 zk	-	2
Regression Data Analysis	01REAN	Franc, Víšek	2+2 z, zk	-	4	-
Image Processing and Pattern Recognition 1	01ROZ1	Flusser, Zitová	-	2+2 zk	-	4
Research Project 1, 2	01VUAM12	Hobza	0+6 z	0+8 kz	6	8
Alternative compulsory courses (1)						
Neural Networks and their Application (2)	01NEUR1	Hakl, Holeňa	-	2+0 zk	-	2
Game Theory	01TEH	Kroupa	-	2+0 zk	-	2
Hierarchical Bayesian Models	01HBM	Šmídl	-	2+0 kz	-	2
Diagnostic Signal Analysis and Processing (3)	01ZASIG	Převorovský	-	3+0 zk	-	3
Optional courses:						
Social Systems and Their Simulation (3)	01SSI	Hrabák, Krbálek	2+1 kz	-	4	-
Modern Theory of Partial Differential Equations	01PDR	Tušek	-	2+0 zk	-	2
Introduction to Graph Theory	01ZTG	Ambrož	4+0 zk	-	4	-
Advanced algorithmization	01PALG	Oberhuber	2 kz	-	2	-
Database System Decomposition	18DATS	Kukal	-	2+2 kz	-	4
Mathematical Methods in Biology and Medicine	01MBI	Klika	2+1 kz	-	3	-
Probabilistic Models of Artificial Intelligence	01UMIN	Vejnarová	2+0 kz	-	2	-
Matlab Applications	18AMTL	Kukal	-	2+2 kz	-	4
Applied Econometrics and Time Series Theory	18AEK	Sekničková	2+2 z, zk	-	4	-
Student Scientific Conference	01SVK	Mikyška	-	5 dní z	-	1

(1) Students obligatorily choose at least one course from this group.
(2) 01NEUR12 replaces 01NSAP.
(3) The contents is linked to an optional subject within the final state examination.

Master's Degree Program

Applied Mathematical Stochastic Methods

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Random Matrix Theory	01TNM	Krbálek	2+0 zk	-	2	-
Design of Experiments	01NEX	Franc, Hobza	2+1 kz	-	4	-
Heuristic Algorithms	18HEUR	Kukal	-	2+2 kz	-	4
Image Processing and Pattern Recognition 2	01ROZP2	Flusser	2+1 zk	-	4	-
Diploma Seminar	01DSEMI	Ambrož	-	0+2 z	-	3
Master Thesis 1, 2	01DPAM12	Ambrož	0+10 z	0+20 z	10	20
Alternative compulsory courses (1)						
Dynamic Decision Making 2	01DRO2	Guy, Kárný	2+0 zk	-	2	-
Financial and Insurance Mathematics	01FIMA	Hora	2+0 zk	-	2	-
Theoretical Bases of Neural Networks (2,3)	01NEUR2	Hakl, Holeňa	2+0 zk	-	3	-
Optional courses:						
Mathematical Logic	01MAL	Cintula	2+1 z, zk	-	4	-
Management, Communication and Innovation	01MKI	Rubeš	0+1 z	-	1	-
SQL Applications	18SQL	Kukal	0+2 z	-	2	-
Mathematical Modelling of Non-linear Systems	01MMNS	Beneš	2 zk	-	3	-

(1) Students obligatorily choose at least one course from this group.
(2) Course has 01NEUR1 as prerequisity.
(3) 01NEUR12 replaces 01NSAP.

Master's Degree Program

Mathematical Informatics

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Languages, Automata and Computability	01JAVY	Ambrož, Pelantová	-	3+1 z, zk	-	5
Mathematical Logic	01MAL	Cintula	2+1 z, zk	-	4	-
Information Theory	01TIN	Hobza	2+0 zk	-	2	-
Parallel Algorithms and Architectures	01PAA	Oberhuber	-	3 kz	-	4
Image Processing and Pattern Recognition 1	01ROZ1	Flusser, Zitová	-	2+2 zk	-	4
Complexity Theory	01TSLO	Majerech	3+0 zk	-	3	-
Number Theory	01TC	Masáková, Pelantová	-	4+0 zk	-	4
Matrix Theory	01TEMA	Pelantová	2+0 z	-	3	-
Introduction to Graph Theory	01ZTG	Ambrož	4+0 zk	-	4	-
Neural Networks and their Application	01NEUR1	Hakl, Holeňa	-	2+0 zk	-	2
Object Oriented Programming	18OOP	Virius	0+2 z	-	2	-
Research Project 1, 2	01VUSI12	Hobza	0+6 z	0+8 kz	6	8
Optional courses:						
Game Theory	01TEH	Kroupa	-	2+0 zk	-	2
Logic in Computer Science	01LOI	Noguera	-	2+0 zk	-	2
Logic for Mathematicians	01LOM	Cintula	-	2+0 zk	-	2
Advanced algorithmization	01PALG	Oberhuber	2 kz	-	2	-
Introduction to Computer Security 2	01ZPB2	Vokáč	1+1 z	-	2	-
Introduction to Mainframe (1)	01UMF	Oberhuber	2 z	-	2	-
Modern Trends in Corporate Information Technologies (2)	01SMF	Oberhuber	-	2 z	-	2
Mainframe Assembler Programming (2)	01PMF	Oberhuber	-	2 z	-	2
Software Testing and Verification (4)	01TVS	Mařík	2+2 z, zk	-	6	-
Diagnostic Signal Analysis and Processing	01ZASIG	Převorovský	-	3+0 zk	-	3
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Regression Data Analysis	01REAN	Franc, Víšek	2+2 z, zk	-	4	-
Probabilistic Models of Artificial Intelligence	01UMIN	Vejnarová	2+0 kz	-	2	-
Applications of Statistical Methods	01ASM	Hobza	-	2+0 kz	-	2
Advanced Methods of Numerical Linear Algebra	01PNLA	Mikyška	2+0 zk	-	3	-
SQL Applications	18SQL	Kukal	0+2 z	-	2	-
Database System Decomposition	18DATS	Kukal	-	2+2 kz	-	4
Aperiodic Structures 1, 2	01APST12	Masáková	2+0 z	2+0 z	2	2
Financial and Insurance Mathematics	01FIMA	Hora	2+0 zk	-	2	-
Assistive Technology	01ASTE	Seifert	0+1 z	-	2	-
Student Scientific Conference	01SVK	Mikyška	-	5 dní z	-	1

(1) Taught in cooperation with Computer Associates, ČR.
(2) Taught in cooperation with IBM, ČR.
(3) Another optional courses ca be A4M33AU Automated Decision, A4M33BIA Biologically Inspired Algorithms, A4B33FLP Functional and Logical Programming, A4M33SAD Machine Learning and Data Analysis, A3B33KUI Cybernetics and Artificial Intelligence, A4M33MAS Multi-Agent Systems taught at the FEL ČVUT v Praze.
(4) Taught at the FEL ČVUT v Praze.

Master's Degree Program

Mathematical Informatics

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Algebraic Structures in Theoretical Informatics	01ALTI	Pošta, Svobodová	1+1 zk	-	3	-
Image Processing and Pattern Recognition 2	01ROZP2	Flusser	2+1 zk	-	4	-
Theoretical Bases of Neural Networks	01NEUR2	Hakl, Holeňa	2+0 zk	-	3	-
Diploma Seminar	01DSEMI	Ambrož	-	0+2 z	-	3
Master Thesis 1, 2	01DPSI12	Ambrož	0+10 z	0+20 z	10	20
Optional courses:						
Methods for Sparse Matrices	01MRM	Mikyška	2+0 zk	-	2	-
Numerical Software	01NUSO	Fürst	2+0 z	-	3	-
Nonlinear Programming	01NELI	Burdík	3+0 zk	-	4	-
Probabilistic Learning Models	01PMU	Hakl	2+0 zk	-	2	-
Stochastic Methods	01STOM	Franc	2+0 kz	-	2	-
Special Functions and Transformations in Image Analysis	01SFTO	Flusser	-	2+0 zk	-	2
Mathematical Modelling of Non-linear Systems	01MMNS	Beneš	2 zk	-	3	-

Master's Degree Program

Computational Physics

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Concepts of Information Physics 1, 2	12KOF12	Kuchařík, Liska	2+0 z	2+0 zk	3	3
Differential Equations on Computer	12DRP	Liska	2+2 z, zk	-	5	-
Advanced Numerical Methods	01PNM	Beneš	-	2+0 kz	-	2
Electrodynamics 1	12ELDY1	Čtyroký	2+0 z, zk	-	3	-
Basics of Artificial Intelligence	12ZUMI	Kléma, Štěpánková	-	2+2 z, zk	-	5
Image Processing and Pattern Recognition 1	01ROZ1	Flusser, Zitová	-	2+2 zk	-	4
Research Project 1, 2	12VUIF12	Liska	0+6 z	0+8 kz	6	8
Optional courses:						
Electrodynamics 2	12ELDY2	Čtyroký	-	4+0 z, zk	-	5
Variational Methods	01VAM	Beneš	2 zk	-	3	-
Finite Element Method	01MKP	Beneš	-	2 zk	-	3
Solid State Physics	11FYPL	Jelínek, Zajac	4+0 z, zk	-	4	-
Physics of High Energy Density	12FVHE	Drška	2+0 zk	-	2	-
Object Oriented Programming	18OOP	Virius	0+2 z	-	2	-
Computer Simulations in Physics of Many Particles 1, 2	12SFMC12	Kotrla, Předota	3+1 z, zk	2+0 zk	2	2
Parallel Algorithms and Architectures	01PAA	Oberhuber	-	3 kz	-	4
Inertial Fusion Physics	12FIF	Klimo, Limpouch	3+1 z, zk	-	4	-
Fundamentals of Laser-Plasma Physics	12ZFLP	Klimo, Pšikal	2+0 zk	-	2	-
Quantum Electronics	12KVEN	Richter	3+1 z, zk	-	5	-
Quantum Optics (1)	12KVO	Richter	-	3+1 z, zk	-	4
Inertial Confinement Fusion	12PICF	Klír, Limpouch	-	2+0 kz	-	2

(1) Examination in 12KVO can be performed after examination in 12KVEN only.

Master's Degree Program

Computational Physics

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Atomic Physics	12AF	Šiňor	4+0 z, zk	-	4	-
Robust Numerical Algorithms	12RNA	Váchal	-	1+1 z	-	2
Diploma Seminar 1, 2	12DSEIF12	Limpouch	0+2 z	0+2 z	2	3
Master Thesis 1, 2	12DPIF12	Limpouch	0+10 z	0+20 z	10	20
Optional courses:						
Physics and Human Cognition	12FLP	Langer	-	2+0 z	-	2
Introduction to Management	12UM	Malát	2+0 zk	-	2	-
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Mathematical Modelling of Non-linear Systems	01MMNS	Beneš	2 zk	-	3	-
Astrophysics	12ASF	Kulhánek	-	2+2 zk	-	4
X-ray Photonics	12RFO	Pína	2 zk	-	2	-
Theoretical Bases of Neural Networks	01NEUR2	Hakl, Holeňa	2+0 zk	-	3	-
Mathematical Logic	01MAL	Cintula	2+1 z, zk	-	4	-
Laser Plasma as Source of Radiation and Particles	12LPZ	Nejdl	2+0 zk	-	2	-

Master's Degree Program

Applications of Software Engineering

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Probability and Applied Statistics	18AST	Fabian	1+1 z, zk	-	3	-
Models and Methods for Economic Decisions	18MEK	Fiala	2+2 z, zk	-	5	-
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Object Oriented Programming	18OOP	Virius	0+2 z	-	2	-
Soft Computing	18SOFC	Kukal	2+2 kz	-	4	-
Applied Econometrics and Time Series Theory	18AEK	Sekničková	2+2 z, zk	-	4	-
Software Engineering	18SWI	Merunka	2+2 kz	-	4	-
Modeling in UML	18MUML	Merunka	-	2+2 z, zk	-	4
Project Management of Economic Systems	18REK	Fiala	-	2+2 z, zk	-	4
Advanced Numerical Methods	01PNM	Beneš	-	2+0 kz	-	2
Fulltext Systems	18FULS	Liška	-	2+2 kz	-	4
Research Project 1, 2	18VUSE12	Kukal	0+6 z	0+8 kz	6	8
Optional courses:						
Advanced C++	18PCP	Virius	-	2+2 z, zk	-	4
Programming for the .NET Framework	18NET	Virius	1+1 z, zk	-	2	-
Advanced Methods of Numerical Linear Algebra	01PNLA	Mikyška	2+0 zk	-	3	-
Matlab Applications	18AMTL	Kukal	-	2+2 kz	-	4
Database System Decomposition	18DATS	Kukal	-	2+2 kz	-	4
Resolution of Physical Issues	18RFP	Novotný	-	1+2 kz	-	3
Parallel Algorithms and Architectures	01PAA	Oberhuber	-	3 kz	-	4
Languages, Automata and Computability	01JAVY	Ambrož, Pelantová	-	3+1 z, zk	-	5
Bussiness Intelligence	18BI	Kukal	1+1 kz	-	2	-
Introduction to Advanced Algorithms 1	18UIA1	Jarý	1+1 z	-	2	-
Advanced Algorithms 2	18UIA2	Jarý	-	1+1 z	-	2
Introduction to Mainframe (1)	01UMF	Oberhuber	2 z	-	2	-
Mainframe Assembler Programming (1)	01PMF	Oberhuber	-	2 z	-	2
Modern Trends in Corporate Information Technologies (1)	01SMF	Oberhuber	-	2 z	-	2
Development of Domain Specific Languages	18DSJ	Smolka, Virius	1+1 kz	-	2	-
Introduction to Computer Simulations	18ZPS	Horňák, Kukal	-	2+2 z	-	4
Theory of Financial Markets	18TFT	Tran	2+2 kz	-	4	-
Financial Markets Data Processing	18ZDFT	Tran	-	2+2 kz	-	4

(1) Taught in cooperation with Computer Associates, ČR.

Master's Degree Program

Applications of Software Engineering

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Modeling of Production Systems in Economy	18MOPR	Sekničková	2+2 z, zk	-	5	-
Statistical Pattern Recognition and Decision Making Methods	18SROZ	Kukal	2+0 zk	-	3	-
Variational Methods B	01VAMB	Beneš	2 kz	-	2	-
Heuristic Algorithms	18HEUR	Kukal	-	2+2 kz	-	4
Background of Information Theory	18ZTI	Fabian	-	2+0 kz	-	2
Diploma Seminar 1, 2	18SDI12	Virius	0+2 z	0+2 z	2	3
Master thesis 1, 2	18DPSE12	Kukal	0+10 z	0+20 z	10	20
Optional courses:						
SQL Applications	18SQL	Kukal	0+2 z	-	2	-
Introduction to Graph Theory	01ZTG	Ambrož	4+0 zk	-	4	-
Complexity Theory	01TSLO	Majerech	3+0 zk	-	3	-
Financial and Insurance Mathematics	01FIMA	Hora	2+0 zk	-	2	-
Nonlinear Programming	01NELI	Burdík	3+0 zk	-	4	-
Probabilistic Learning Models	01PMU	Hakl	2+0 zk	-	2	-
Dynamic Decision Making 1	01DRO1	Guy, Kárný	-	2+0 zk	-	2
Introduction to Management	12UM	Malát	2+0 zk	-	2	-
Theory of Random Processes	01NAH	Hobza	3+0 zk	-	3	-
Methods for Sparse Matrices	01MRM	Mikyška	2+0 zk	-	2	-
Data Warehouse Systems, big data processing	18DWH	Barbierik, Liška	-	2+2 zk	-	4
Number Theory	01TC	Masáková, Pelantová	-	4+0 zk	-	4
Image Processing and Pattern Recognition 1	01ROZ1	Flusser, Zitová	-	2+2 zk	-	4
Industrial Software Development	18PVS	Virius	1+1 z	-	2	-
Modelling and Control of Continuous Systems	18MRSS	Kukal	2+2 kz	-	4	-
Control of Discrete Systems	18RDS	Kukal	-	2+2 kz	-	4

Master's Degree Program

Nuclear Engineering

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Nuclear Reactor Physics	17FAR	Frýbort, Heraltová, Sklenka	2+2 z, zk	-	5	-
Core Physics and Fuel Management	17PRF	Sklenka	-	2+0 z, zk	-	3
Reactor Dynamics	17DYR	Heřmanský, Huml	-	2+2 z, zk	-	4
Reactor Thermomechanics	17TERR	Bílý, Heřmanský	2+2 z, zk	-	4	-
Experimental Reactor Physics	17ERF	Rataj, Sklenka	-	4 kz	-	4
Nuclear Fuel Cycle	17JPC	Sklenka, Starý	-	2+0 kz	-	2
Thermohydraulic Design of Nuclear Devices 4	17THNJ4	Kobylka	3+0 z, zk	-	4	-
Machines and Equipment of Nuclear Power Plants	17SAZ	Kobylka	2+1 z, zk	-	3	-
Short-Term Intership Abroad (1)	17EXZ	Frýbort	-	1 týden z	-	2
Research Project 1, 2	17VUJR12	Frýbort	0+6 z	0+8 kz	6	8
Optional courses:						
Computer Control of Experiments	17PRE	Kropík	2+1 z, zk	-	3	-
Stochastic Methods in Reactor Physics	17SMRF	Huml	2+2 kz	-	4	-
Deterministic Methods in Reactor Physics	17DERF	Frýbort	-	2+2 kz	-	4
Digital Safety Systems of Nuclear Reactors	17CIBS	Kropík	2+0 z, zk	-	2	-
Energy Sector and Energy Sources (2)	17EEZ	Tichý, Kobylka	-	2+1 z, zk	-	3
Selected Parts of Legislation (3)	17VPL	Bílková, Fuchsová	-	2+0 z	-	2
Economic Evaluation of Nuclear Power Plants (4)	17EHJE	Starý	2+0 zk	-	2	-
Informatics for Modern Physicists (5)	17IMF	Havlůj	0+3 kz	-	3	-
Materials Science for Reactors	14NMR	Haušild	-	2+0 zk	-	2

(1) For students of this field only.
(2) To be subsribed if not graded in 17EZE.
(3) To be subsribed if not graded in 17ALE.
(4) To be subsribed if not graded in 17ZEH.
(5) Course is open for at least 3 students – it is necessary to enroll in at least 3 days prior the semester.

Master's Degree Program

Nuclear Engineering

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Spent Nuclear Fuel and Radioactive Waste (1)	17VPO	Konopásková	-	2 zk	-	2
Operator Course at VR-1 Reactor (2)	17OPK	Rataj, Kropík	4 z, zk	-	4	-
Nuclear Safety	17JBEZ	Heřmanský, Kříž	4+0 zk	-	4	-
Electrical Equipment of Nuclear Power Plants	17ELZ	Bouček, Kropík	2+1 z, zk	-	3	-
Pre-diploma Practice at the Nuclear Powerplant (3)	17PRAXD	Kropík	1 týden z	-	1	-
Pre-diploma Seminar	17DSEM	Kropík	-	0+2 z	-	2
Master Thesis 1, 2	17DPJR12	Kropík	0+10 z	0+20 z	10	20
Optional courses:						
Reliability of Nuclear Power Plants (4)	17SPJE	Dušek, Matějka	2+0 zk	-	2	-
New Nuclear Sources	17NJZ	Bílý	3+0 zk	-	3	-
Exploration of Research Reactors (5)	17VYRR	Sklenka	-	2+0 zk	-	2
Critical Experiment (6)	17KE	Huml, Rataj	0+2 kz	-	2	-
Laboratory Training in Power Supply (4)	17LAPE	Kobylka	0+3 z	-	3	-
Selected Topics in Power Supply (4)	17VYPE	Kobylka	-	3+0 z	-	2
Simulation of NPP Operational States	17SIPS	Kobylka	-	0+3 kz	-	3
Thermomechanics of Nuclear Fuel	17TMP	Kobylka, Valach	-	2+1 z, zk	-	3
Radiation Protection of Nuclear Facilities	17ROJ	Starý	-	2+0 zk	-	2
Advanced Methods in Spent Fuel Reprocessing and Salt Reactor Technologies (4)	17PPSR	Uhlíř	-	2+1 zk	-	3

(1) To be subsribed if not graded in 17RAO.
(2) To be subsribed if graded in 17DYR a 17 ERF and not graded in 17OPKB.
(3) For students of this field only..
(4) Open provided enough students are enrolled.
(5) To be subsribed if not graded in 17VYR.
(6) To be subsribed if graded in 17ERF.

Master's Degree Program

Dosimetry and Applications of Ionising Radiation

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Nuclear Technology Devices	16ZJT	Čechák	2+0 zk	-	2	-
Practicum in Detection and Dosimetry of Ionizing Radiation	16PDZ	Průša	0+4 kz	-	5	-
Radiation Protection	16RAO	Vrba T.	4+0 zk	-	4	-
Instrumentation for Radiation Measurements	16MER	Průša	2+0 zk	-	2	-
Introduction to Environment	16ZIVO	Čechák, Thinová	2+0 kz	-	2	-
Principles of Ionizing Radiation Application	16UAZ	Musílek	2+0 zk	-	2	-
Integral Dosimetry Methods	16IDOZ	Ambrožová, Musílek	-	2+0 zk	-	2
Applications of Ionizing Radiation in Science and Industry	16APLV	Čechák	-	4+0 zk	-	5
Monte Carlo Method in Radiation Physics	16MCRF	Klusoň, Urban	-	2+2 z, zk	-	4
Methods of Analytical Measurement	16AMM	Bártová	-	2+0 zk	-	2
Dosimetry and Radioactivity of the Environment	16DRZP	Čechák, Thinová	-	2+0 zk	-	2
Excursion	16EX	Thinová	-	1 týden z	-	3
Seminar	16SEMA	Johnová	-	0+2 z	-	2
Research Project 1, 2	16VUDZ12	Trojek	0+6 z	0+8 kz	6	8
Optional courses:						
Radiation Effects in Matter	16REL	Pilařová	2+0 zk	-	2	-
Treatment of Experimental Data	16ZED	Pilařová	2+0 zk	-	2	-
Practicum in Measurement Methods for Ionizing Radiation (1)	16PMM	Průša	0+2 z	-	2	-
Experimental Methods of Nuclear Physics	02EMJF	Vrba V.	2+0 zk	-	3	-
Practicum in Dosimetry of Ionizing Radiation	16PDIZ	Thinová	-	0+4 kz	-	4

(1) To be subscribed only if graded in 16MER.

Master's Degree Program

Dosimetry and Applications of Ionising Radiation

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Medical Application of Ionizing Radiation	16AIZM	Novák	2+1 z, zk	-	3	-
Metrology of Ionizing Radiation	16MEIZ	Čechák, Dryák	2+1 z, zk	-	4	-
Spectrometry in Dosimetry	16SPDO	Čechák, Dryák	2+0 zk	-	3	-
Mathematical Methods and Modelling	16MMM	Klusoň, Urban	0+2 z	-	2	-
Microdosimetry	16MDOZ	Davídková	2+0 zk	-	2	-
Physics and Technic of the Nonionizing Radiation	16FNEI	Klusoň, Thinová	2+0 zk	-	2	-
Introduction to Particle Physics	16UCF	Smolík	2+0 zk	-	2	-
Seminar 1, 2	16SEM12	Johnová	0+2 z	0+2 z	2	2
Master Thesis 1, 2	16DPDZ12	Trojek	0+10 z	0+20 z	10	20
Optional courses:						
Neutron Dosimetry	16DNEU	Ploc	2+0 zk	-	2	-
Clinical Dosimetry	16KLD	Hanušová, Novotný	-	2+0 zk	-	2
Dosimetry of Internal Radiation Sources	16DZAR	Musílek	-	2+0 zk	-	2
Radiobiology	16RBIO	Davídková	-	2+0 zk	-	2
Practicum in Dosimetry of Ionizing Radiation	16PDIZ	Thinová	-	0+4 kz	-	4
Experimental Methods of Nuclear Physics	02EMJF	Vrba V.	2+0 zk	-	3	-
Radionuclides in the Environment	16RZP	Matolín, Thinová	-	2+0 zk	-	2
Introduction into Physics of Scintillators and Phosphors	16FSC	Nikl	-	2+0 zk	-	2
Design of Semiconductor Detectors of Ionizing Radiation	16KPD	Kákona	-	0+3 z	-	3

Master's Degree Program

Experimental Nuclear and Particle Physics

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Quantum Field Theory 1, 2	02QFT12	Adam, Tolar	4+2 z, zk	3+1 z, zk	7	5
Experimental Methods of Nuclear Physics	02EMJF	Vrba V.	2+0 zk	-	3	-
Experimental Methods of Subnuclear Physics	02EMSF	Adamová, Petráček	-	2+0 zk	-	2
Project Practicum 1, 2	02PPRA12	Čepila	0+2 z	0+4 kz	2	4
Physics of Atomic Nuclei	02FAJ	Adam, Petráček, Veselý	-	4+0 zk	-	4
Neutron Physics	02NF	Šaroun, Vacík	-	2+2 z, zk	-	4
Excursion	02EXK	Petráček	-	1 týden z	-	1
Research Project 1, 2	02VUEF12	Petráček	0+6 z	0+8 kz	6	8
Optional courses:						
Workshop on Experimental Nuclear Physics 2 (1)	02EJFS2	Petráček	5 dní z	-	1	-
Physics of Ultra-Relativistic Nuclear Collisions	02RFTI	Contreras	2+1 z, zk	-	3	-
Nuclear Technology Devices	16ZJT	Čechák	2+0 zk	-	2	-
Groups and Representations	02GR	Chadzitaskos	2+1 z, zk	-	3	-
Numerical Calculations in Quantum Mechanics 1, 2	02NVKM12	Čepila	0+3 z	0+3 z	3	3
Extreme States of Matter	02ESH	Šumbera	-	2+0 z	-	2
Seminar on Quark-Gluon Plasma 3, 4	02RQGP34	Bielčík, Bielčíková, Tomášik	2+0 z	2+0 z	1	1
Statistical Data Processing	02SSD	Rusňáková, Myška	2+2 z, zk	-	4	-
Statistical Data Analysis 2	02SSD2	Rusňáková, Myška	-	2+2 z, zk	-	4
Particle Accelerators	02UC	Doležal	2+0 zk	-	2	-
Particle accelerators 2	02UC2	Krůs	-	2+0 zk	-	2
Materials in Experimental Nuclear Physics	02MAT	Škoda	2+0 zk	-	2	-
Space Radiation	02KZ	Nosek	-	2+0 zk	-	2
Lie Algebras and Lie Groups	02LIAG	Šnobl	-	3+2 z, zk	-	6
Programmable Logic Arrays	17PLP	Kropík	-	2+0 zk	-	2
Nuclear Astrophysics	02JAS	Nosek	2+0 zk	-	2	-
Path Integral	02DRI	Jizba	2+1 z, zk	-	3	-
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-

(1) For students of this field only.

Master's Degree Program

Experimental Nuclear and Particle Physics

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Fundamentals of Electroweak Theory	02ZESI	Bielčíková, Tomášik	2+2 z, zk	-	4	-
Quantum Chromodynamics	02ZQCD	Bielčíková, Nemčík, Tomášik	-	3+2 z, zk	-	6
Nuclear Spectroscopy	02JSP	Wagner	-	2+2 z, zk	-	5
Seminar 1, 2	02SEMI12	Petráček	0+2 z	0+2 z	2	3
Master Thesis 1, 2	02DPEF12	Petráček	0+10 z	0+20 z	10	20
Optional courses:						
Workshop on Experimental Nuclear Physics 3 (1)	02EJFS3	Petráček	5 dní z	-	1	-
Seminar on Quark-Gluon Plasma 5, 6	02RQGP56	Bielčík, Bielčíková, Tomášik	2+0 z	2+0 z	1	1
Computer Control of Experiments	17PRE	Kropík	2+1 z, zk	-	3	-
Experimental Tests of the Standard Model	02ETSM	Leitner	2+0 zk	-	2	-
Functional Integral 1, 2	02FCI12	Jizba	2+0 z	2+0 z	2	2
Applied Quantum Chromodynamics at High Energies	02AQCD	Nemčík	-	2+0 zk	-	2

(1) For students of this field only.

Master's Degree Program

Radiological Physics

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Integral Dosimetry Methods	16IDOZ	Ambrožová, Musílek	-	2+0 zk	-	2
Monte Carlo Method in Radiation Physics	16MCRF	Klusoň, Urban	-	2+2 z, zk	-	4
Image Processing and Pattern Recognition 1	01ROZ1	Flusser, Zitová	-	2+2 zk	-	4
Introduction to Quality Management in Health Care	16USRJ	Pešek	1+1 z	-	2	-
Biochemistry and Pharmacology	16BAF	Eigner Henke, Kovář	2+0 zk	-	2	-
Radiation Protection	16RAO	Vrba T.	4+0 zk	-	4	-
Medical Informatics	16INZ	Klusoň, Urban	1+1 kz	-	2	-
Basics of First Aid	16ZPP	Málek	0+2 z	-	2	-
Radiobiology	16RBIO	Davídková	-	2+0 zk	-	2
Radiological Physics - Diagnostic Radiology	16RFRD	Novák	2+1 z, zk	-	3	-
X-Ray Diagnostics - Clinical Training	16RDKP	Čechák, Súkupová	2 týd z	-	4	-
Radiological Physics - Nuclear Medicine	16RFNM	Trnka	2+1 z, zk	-	3	-
Nuclear Medicine - Clinical Training	16NMKP	Čechák, Mihalová	-	2 týdny z	-	4
Radiological Physics - Radiotherapy 1	16RFRT1	Koniarová	-	2+1 z, zk	-	3
Radiotherapy - Clinical Training 1	16RTKP1	Čechák, Koniarová	-	1 týden z	-	2
Pathology, Anatomy, and Physiology in Imaging Techniques 1	16PAFZ1	Válek	-	2+0 zk	-	2
General Anatomy and Human Physiology 1, 2 (1)	16OAF12	Doubková, Vaculín	2+2 z, zk	2+2 z, zk	4	4
Selected Topics in Dosimetry	16VYPD	Čechák	2+0 zk	-	2	-
Excursion	16EX	Thinová	-	1 týden z	-	3
Research Project 1, 2	16VURF12	Trojek	0+6 z	0+8 kz	6	8
Optional courses:						
Principles of Ionizing Radiation Application	16UAZ	Musílek	2+0 zk	-	2	-
Methods of Analytical Measurement	16AMM	Bártová	-	2+0 zk	-	2
Instrumentation for Radiation Measurements	16MER	Průša	2+0 zk	-	2	-
Applications of Ionizing Radiation in Science and Industry	16APLV	Čechák	-	4+0 zk	-	5
Treatment of Experimental Data	16ZED	Pilařová	2+0 zk	-	2	-

(1) Can be subscribed in not graded in 16ZBAF12 in the bachelor's studies.

Master's Degree Program

Radiological Physics

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Radiological Physics - Radiotherapy 2	16RFRT2	Koniarová	2+1 z, zk	-	3	-
Pathology, Anatomy, and Physiology in Imaging Techniques 2	16PAFZ2	Válek	2+0 zk	-	2	-
Clinical Dosimetry	16KLD	Hanušová, Novotný	-	2+0 zk	-	2
Radiotherapy - Clinical Training 2	16RTKP2	Čechák, Koniarová	1 týden z	-	2	-
Practicum in Detection and Dosimetry of Ionizing Radiation	16PDZ	Průša	0+4 kz	-	5	-
Technical and Health-Care Regulations	16TZP	Závoda	-	2+0 z	-	2
Ethics in Health Care	16EZ	Strobachová	1+0 z	-	1	-
Hygiene a Epidemiology	16HE	Lajčíková	1+0 z	-	1	-
Seminar 1, 2	16SEM12	Johnová	0+2 z	0+2 z	2	2
Master Thesis 1, 2	16DPRF12	Trojek	0+10 z	0+20 z	10	20
Optional courses:						
Image Processing and Pattern Recognition 2	01ROZP2	Flusser	2+1 zk	-	4	-
Spectrometry in Dosimetry	16SPDO	Čechák, Dryák	2+0 zk	-	3	-
Dosimetry of Internal Radiation Sources	16DZAR	Musílek	-	2+0 zk	-	2
Microdosimetry	16MDOZ	Davídková	2+0 zk	-	2	-
Metrology of Ionizing Radiation	16MEIZ	Čechák, Dryák	2+1 z, zk	-	4	-
Physics and Technic of the Nonionizing Radiation	16FNEI	Klusoň, Thinová	2+0 zk	-	2	-
Radiation Effects in Matter	16REL	Pilařová	2+0 zk	-	2	-
Neutron Dosimetry	16DNEU	Ploc	2+0 zk	-	2	-
Monte Carlo Method	18MMC	Virius	2+2 z	-	4	-
Hadron Therapy	16HADR	Vrba T.	-	2+0 zk	-	2

Master's Degree Program

Solid State Engineering

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Semiconductor Physics 1	11POL1	Potůček	4+0 zk	-	6	-
Physics of Magnetic Materials	11MAGN	Zajac	-	2+0 zk	-	3
Physics of Metals	11KOV	Lejček	2+0 zk	-	3	-
Physics of Dielectrics	11DIEL	Bryknar	-	2+0 zk	-	3
Diploma Seminar 1, 2	11SMX12	Vratislav, Kučeráková	0+2 z	0+2 z	3	3
Solid State Theory 1	11TPL1	Mihóková, Zajac	4+0 zk	-	6	-
Solid State Theory 2	11TPL2	Sedlák, Seiner, Zajac	-	2+0 zk	-	3
Research Project 1, 2	11VUIP12	Vratislav	0+6 z	0+8 kz	6	8
Optional courses:						
Real Time Software	11RTSW	Jiroušek	-	2+0 z	-	3
Practical Exercises from Solid State Structure Analysis	11PSPL	Ganev, Kolařík, Vratislav	0+4 kz	-	4	-
Semiconductor Physics 2	11POL2	Aubrecht	-	2+0 zk	-	2
Practical Training of Semiconductors	11PPOL	Aubrecht, Dragounová	-	0+4 kz	-	4
Superconductivity and Low Temperature	11SUPR	Janů, Ledinský	4+0 zk	-	4	-
Construction of Semiconductor Devices	11KPS	Sopko	-	2+0 zk	-	2
Technology of Microwave and Optoelectronic Devices	11TVOS	Sopko	-	2+0 zk	-	2
Chemical Aspects of Solids	11CHA	Knížek	2+0 zk	-	2	-
Practical Training in Electronics	11EP	Jiroušek	0+4 kz	-	4	-
Metallic Oxides	11KO	Hejtmánek	-	2+0 zk	-	2
Physics of Solid State Phase Transitions	11FPPL	Hlinka	-	2+0 zk	-	2
Applied Neutron Diffractometry	11AND	Kučeráková, Vratislav	2+0 zk	-	2	-
Diffraction Methods of Structural Biology	11DMSB	Dohnálek	-	3 z, zk	-	3
Quantum Computation	11KVAP	Andrey	-	2+0 zk	-	2
Molecular Nanosystems	11MONA	Kratochvílová	2+0 zk	-	2	-
Optical Spectroscopy of Inorganic Solids	11OSAL	Potůček	-	2+0 zk	-	2
Seminar in Solid State Theory	11STPL	Sedlák, Seiner	-	0+2 kz	-	2
Selected Topics in Structure of Condensed Matter	11VPS	Drahokoupil	-	1+1 zk	-	2
Nano-Materials - Preparation and Properties	11NAMA	Kratochvílová	-	2+0 zk	-	2

Master's Degree Program

Solid State Engineering

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Optical Properties of Solids	11OPT	Bryknar	2+0 zk	-	3	-
Modern Experimental Methods	11MEM1	Drahokoupil, Vratislav	5+0 z	-	5	-
Surface Physics 1, 2	11FYPO12	Kalvoda	2+0 zk	2+0 zk	2	2
Computer Simulation of Condensed Matter	11SIKL	Kalvoda, Sedlák	2+2 z, zk	-	4	-
Diploma Seminar 3, 4	11SMX34	Vratislav, Kučeráková	0+2 z	0+2 z	3	3
Master Thesis 1, 2	11DPIP12	Vratislav	0+10 z	0+20 z	10	20
Optional courses:						
Special Semiconductor Materials and Devices	11SMAT	Sopko	2+0 zk	-	2	-
Semicoductor Detectors	11DETE	Sopko	-	2+0 zk	-	2
Theory and Construction of Photovoltaic Cells	11PCPC	Pfleger	2+0 zk	-	2	-
Neutronography in Material Research	11NMV	Vratislav	-	2+0 zk	-	2
Diffraction Analysis of Mechanical Stress	11DAN	Ganev, Kraus	2+0 zk	-	2	-
Smart Materials and Their Applications	11SMAM	Potůček, Sedlák	2+0 zk	-	2	-
Principles and Applications of Optical Sensors with Practical Trainings	11PAO	Aubrecht	2+0 zk	-	2	-
Intrinsic Dynamics of Materials	11VDM	Seiner	2+0 zk	-	3	-
Magnetic Materials	11MAM	Heczko	2+0 zk	-	2	-
Laboratory in Macromolecular Crystallography 1, 2	11PMK12	Kolenko	0+4 kz	0+4 kz	4	4
SEM and Methods of Microbeam Analysis	11SEM	Kopeček	2+0 zk	-	2	-

Master's Degree Program

Diagnostics of Materials

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Dynamics of Continuum	14DYKO	Horáček	2+0 z, zk	-	3	-
Fracture Mechanics 1, 2	14LME12	Kunz	2+0 z, zk	2+0 z, zk	3	3
Analysis of Experimental Data 1, 2	14AED12	Kopřiva	2 z, zk	2 z, zk	3	3
Experimental Methods 1, 2	14EXM12	Jaroš, Kovářík, Nedbal, Siegl	4 kz	4 kz	4	4
Physical Metallurgy 1, 2	14FYM12	Karlík, Haušild	4 z, zk	2+0 z, zk	6	3
Plasticity 1	14PLAS1	Oliva	-	2+0 z, zk	-	3
Fatigue of Materials	14UNMA	Lauschmann	-	2+0 kz	-	3
Research Project 1, 2	14VUSM12	Kopřiva	0+6 z	0+8 kz	6	8
Optional courses:						
Elasticity 2	14EME2	Materna, Oliva	4 z, zk	-	6	-
Computational Mechanics	14PME	Okrouhlík	-	3 kz	-	4
Variational Methods B	01VAMB	Beneš	2 kz	-	2	-

Master's Degree Program

Diagnostics of Materials

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Non-Metallic Materials	14NEKO	Haušild, Karlík	2+0 z, zk	-	3	-
Plasticity 2	14PLAS2	Oliva	2+0 z, zk	-	4	-
Theory of Reliability	14TSPO	Kopřiva	2+0 z, zk	-	3	-
Practicum in Finite Elements Methods	14PMKP	Materna	0+2 kz	-	3	-
Nondestructive Diagnostics	14NEDI	Převorovský	2 z	-	3	-
Intrinsic Dynamics of Materials	11VDM	Seiner	2+0 zk	-	3	-
Pre-diploma Practice	14PRAXE	Oliva	2 týdny z	-	4	-
Master Thesis 1, 2	14DPSM12	Oliva	0+10 z	0+20 z	10	20
Optional courses:						
Wave Phenomena in Solids	14VLN	Červ	2+0 z	-	3	-
Seminar	14SEM	Siegl	-	0+4 z	-	8
Fractography and Failure Analysis	14FAP	Siegl	-	2+0 z	-	3

Master's Degree Program

Laser Technology and Electronics

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Electrodynamics 1, 2	12ELDY12	Čtyroký	2+0 z, zk	4+0 z, zk	3	5
Optical Physics 1	12FOPT1	Richter, Škereň	3+0 z, zk	-	3	-
Nonlinear Optics (1)	12NLOP	Richter	-	3+1 z, zk	-	5
Quantum Electronics	12KVEN	Richter	3+1 z, zk	-	5	-
Solid State Physics	11FYPL	Jelínek, Zajac	4+0 z, zk	-	4	-
Laser Physics	12FLA	Šulc	-	4 z, zk	-	4
Open Resonators	12ORE	Kubeček	2+1 z, zk	-	3	-
Solid-state, Diode and Dye lasers	12PDBL	Jelínková, Kubeček	-	2+0 z, zk	-	2
Measurements Methods in Electronics and Optics	12MMEO	Pína	-	2+0 zk	-	2
Electronics 3	12EL3	Pavel	2+0 zk	-	2	-
Electronics Practicum 1, 2	12EP12	Pavel	0+2 kz	0+2 kz	3	3
Research Project 1, 2	12VULT12	Jelínková	0+6 z	0+8 kz	6	8
Optional courses:						
Statistical Optics	12SOP	Richter	2+0 z, zk	-	2	-
Optical Physics 2	12FOPT2	Richter, Škereň	-	2+0 z, zk	-	2
Geometrical Optics	12GEOP	Dvořák, Procházka	-	3+1 z, zk	-	4
Optical Spectroscopy	12OPS	Michl	-	2+0 zk	-	2
Quantum Optics (2)	12KVO	Richter	-	3+1 z, zk	-	4
Physics of Detection and Detectors of Optical Radiation	12FDD	Pína	2+0 zk	-	2	-
X-ray Photonics	12RFO	Pína	2 zk	-	2	-
Differential Equations on Computer	12DRP	Liska	2+2 z, zk	-	5	-
Fundamentals of Laser-Plasma Physics	12ZFLP	Klimo, Pšikal	2+0 zk	-	2	-

(1) Grading in 12NLOP possible after grading in 12FOPT1.
(2) Grading in 12KVO possible after grading in 02KVEN.

Master's Degree Program

Laser Technology and Electronics

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Fiber Lasers and Amplifiers	12VLA	Kubeček, Peterka	3 zk	-	3	-
Ultra-short Pulse Generation	12UKP	Kubeček	2+0 zk	-	2	-
Advanced Laser Technique Laboratory	12PPLT	Kubeček, Němec	0+4 kz	-	6	-
Optical Sensors	12OSE	Homola	-	2+0 zk	-	2
Gas and X-ray Lasers	12RTGL	Jančárek, Jelínková	-	2+0 z, zk	-	2
Laser, Plasma and Beam Technologies	12LPST	Jančárek, Jelínková, Král	-	2+2 zk	-	4
Diploma Seminar 1, 2	12DSELT12	Jelínková	0+2 z	0+2 z	2	3
Master Thesis 1, 2	12DPLT12	Jelínková	0+10 z	0+20 z	10	20
Optional courses:						
Electronics for Lasers	12ELA	Pavel	2+0 zk	-	2	-
Computer Control of Experiments	12POEX	Čech	-	2+0 z	-	2
Advanced Laser Spectroscopy (1)	12PLS	Michl	2+0 zk	-	2	-
Fourier Optics and Optical Signal Processing	12OZS	Richter	3+0 z, zk	-	3	-
Selected Chapters of Modern Optics	12MODO	Kwiecien	2+0 z	-	2	-
Laser in Medicine Practice	12PLM	Jelínková, Němec	-	4 kz	-	6
Advanced Optical Laboratory (2)	12PPRO	Jančárek	0+4 kz	-	6	-

(1) Grading in 12PLS possible after grading in 12OPS.
(2) Subscription of 12PPOP possible after grading in 12FOPT1 and 12FOPT2.

Master's Degree Program

Optics and Nanostructures

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Electrodynamics 1, 2	12ELDY12	Čtyroký	2+0 z, zk	4+0 z, zk	3	5
Solid State Physics	11FYPL	Jelínek, Zajac	4+0 z, zk	-	4	-
Optical Physics 1, 2	12FOPT12	Richter, Škereň	3+0 z, zk	2+0 z, zk	3	2
Quantum Electronics	12KVEN	Richter	3+1 z, zk	-	5	-
Nonlinear Optics (1)	12NLOP	Richter	-	3+1 z, zk	-	5
Statistical Optics	12SOP	Richter	2+0 z, zk	-	2	-
Optical Spectroscopy	12OPS	Michl	-	2+0 zk	-	2
Nanoscopy and Nanocharacterization	12NAN	Fejfar	2+0 zk	-	2	-
Surfaces and Boundaries	11POR	Kalvoda	-	2+0 zk	-	2
Research Project 1, 2	12VUOF12	Richter	0+6 z	0+8 kz	6	8
Optional courses:						
Geometrical Optics	12GEOP	Dvořák, Procházka	-	3+1 z, zk	-	4
Quantum Optics (2)	12KVO	Richter	-	3+1 z, zk	-	4
Measurements Methods in Electronics and Optics	12MMEO	Pína	-	2+0 zk	-	2
Physics of Detection and Detectors of Optical Radiation	12FDD	Pína	2+0 zk	-	2	-
Solid-state, Diode and Dye lasers	12PDBL	Jelínková, Kubeček	-	2+0 z, zk	-	2
Electronics 3	12EL3	Pavel	2+0 zk	-	2	-
Electronics Practicum 1, 2	12EP12	Pavel	0+2 kz	0+2 kz	3	3
Fiber Lasers and Amplifiers	12VLA	Kubeček, Peterka	3 zk	-	3	-
Nanochemistry	12NCH	Proška	2+0 zk	-	2	-
Optical Semiconductors Properties	12OVP	Oswald	2+0 zk	-	2	-
Preparation of Semiconductor Nanostructures	12PN	Hulicius	-	2+0 zk	-	2
Selected Nanostructures Chapters	12VKNS	Hulicius	-	2 kz	-	2

(1) Grading in 12NLOP possible after grading in 12FOPT1.
(2) Grading in 12KVO possible after grading in 12KVEN.

Master's Degree Program

Optics and Nanostructures

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Integrated Optics	12INTO	Čtyroký	2+0 z, zk	-	2	-
Fourier Optics and Optical Signal Processing	12OZS	Richter	3+0 z, zk	-	3	-
X-ray Photonics	12RFO	Pína	2 zk	-	2	-
Nanophysics	12NF	Richter, Šiňor	2+0 zk	-	2	-
Optical Sensors	12OSE	Homola	-	2+0 zk	-	2
Advanced Optical Laboratory (2)	12PPRO	Jančárek	0+4 kz	-	6	-
Diploma Seminar 1, 2	12DSEOF12	Jelínková	0+2 z	0+2 z	2	3
Master Thesis 1, 2	12DPOF12	Richter	0+10 z	0+20 z	10	20
Optional courses:						
Selected Chapters of Modern Optics	12MODO	Kwiecien	2+0 z	-	2	-
Excursions to Optical Workplaces	12EOP	Havel	0+4 z	-	4	-
Advanced Laser Spectroscopy (1)	12PLS	Michl	2+0 zk	-	2	-
Computer Control of Experiments	12POEX	Čech	-	2+0 z	-	2
Laser, Plasma and Beam Technologies	12LPST	Jančárek, Jelínková, Král	-	2+2 zk	-	4
Gas and X-ray Lasers	12RTGL	Jančárek, Jelínková	-	2+0 z, zk	-	2
Advanced Laser Technique Laboratory	12PPLT	Kubeček, Němec	0+4 kz	-	6	-
Nanoelectronics	12NAE	Voves	2+0 zk	-	2	-
Spontaneously-grown Structures of Selected Nanomaterials	12SRS	Bouda	2+0 kz	-	2	-
Physics and Human Cognition	12FLP	Langer	-	2+0 z	-	2
Introduction to Management	12UM	Malát	2+0 zk	-	2	-

(1) Grading in 12PLS possible after grading in 12OPS.
(2) Grading in 12PPOP possible after grading in 12FOPT1 and 12FOPT2.

Master's Degree Program

Physics and Technology of Thermonuclear Fusion

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Plasma Theory 1, 2	02TPLA12	Kulhánek	2+2 z, zk	3+1 z, zk	5	5
Plasma Diagnostics	02DPLA	Kubeš	-	2+1 z, zk	-	3
Computer Modelling of Plasma	02PMPL	Plašil	-	2+1 z, zk	-	3
Technology of Thermonuclear Facilities	02TTJZ	Ďuran, Entler	-	3+0 zk	-	3
Inertial Fusion Physics	12FIF	Klimo, Limpouch	3+1 z, zk	-	4	-
Physics of Tokamaks	02FT	Mlynář	3+1 z, zk	-	4	-
Atomic and Molecular Physics	02AMF	Břeň	2+2 z, zk	-	4	-
Materials Science for Reactors	14NMR	Haušild	-	2+0 zk	-	2
Laboratory Work in Plasma Physics 1, 2	02PRPL12	Svoboda	0+2 z	0+2 kz	2	2
Research Project 1, 2	02VUTF12	Svoboda	0+6 z	0+8 kz	6	8
Optional courses:						
Topics in Magnetic Confinement Fusion	02PMCF	Mlynář	-	0+2 kz	-	2
Inertial Confinement Fusion	12PICF	Klír, Limpouch	-	2+0 kz	-	2
Superconductivity and Low Temperature	11SUPR	Janů, Ledinský	4+0 zk	-	4	-
Low Temperature Plasmas and Discharges	12NIPL	Král	4+0 z, zk	-	4	-
Differential Equations on Computer	12DRP	Liska	2+2 z, zk	-	5	-
Computer Control of Experiments	12POEX	Čech	-	2+0 z	-	2
Neutron Physics	02NF	Šaroun, Vacík	-	2+2 z, zk	-	4
Optical Spectroscopy	12OPS	Michl	-	2+0 zk	-	2
Nuclear Technology Devices	16ZJT	Čechák	2+0 zk	-	2	-
Winter (Summer) School of Plasma Physics and Fusion Physics 1, 2 **(1)**	02ZLSTF12	Svoboda	1 týden z	1 týden z	1	1

(1) For students of this field only.

Master's Degree Program

Physics and Technology of Thermonuclear Fusion

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Seminar 1, 2	02STF12	Limpouch, Mlynář	0+2 z	0+2 z	2	3
ITER and the Accompanying Programme (1)	02ITER	Mlynář	2+0 zk	-	3	-
Pinches (1)	02PINC	Kubeš	2+0 zk	-	3	-
Physics and Human Cognition	12FLP	Langer	-	2+0 z	-	2
Master Thesis 1, 2	02DPTF12	Svoboda	0+10 z	0+20 z	10	20
Optional courses:						
Mathematical Modelling of Non-linear Systems (1)	01MMNS	Beneš	2 zk	-	3	-
History, Social and Economical Aspects of Fusion	02HSEF	Řípa	1+0 kz	-	2	-
Computer Simulations in Physics of Many Particles 1, 2	12SFMC12	Kotrla, Předota	3+1 z, zk	2+0 zk	2	2
Neutron Dosimetry	16DNEU	Ploc	2+0 zk	-	2	-
Introduction to Environment	16ZIVO	Čechák, Thinová	2+0 kz	-	2	-
Introduction to Management	12UM	Malát	2+0 zk	-	2	-
Radiation Effects in Matter	16REL	Pilařová	2+0 zk	-	2	-
Astrophysics	12ASF	Kulhánek	-	2+2 zk	-	4

(1) At least one must be selected.

Master's Degree Program

Nuclear Chemistry

Year 1

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Separation Methods in Nuclear Chemistry 1	15SMJ1	Němec	3+0 zk	-	3	-
Radiation Chemistry	15RACH	Motl	-	3+0 zk	-	4
Radioanalytical Methods	15RAM	John	-	3+0 zk	-	3
Trace Radiochemistry	15STP	Filipská, John	3+0 zk	-	3	-
Physical Chemistry 3	15FCHN3	Čuba	1+1 z, zk	-	2	-
Physical Chemistry 4	15FCHN4	Bárta, Múčka, Silber	-	3+2 z, zk	-	5
Practical Exercises in Separation Methods (1)	15SEPM	Němec, Čubová, Špendlíková	-	0+3 kz	-	3
Practical Exercises in Radiation Chemistry (2)	15PRACH	Bárta, Čuba	-	0+3 kz	-	3
Practical Exercises in Nuclear Chemistry	15PJCH	Čubová, Němec	0+4 kz	-	4	-
Environment Chemistry and Radioecology	15RAEK	Filipská, Vopálka	2+0 zk	-	2	-
Internship	15PRAKN	Čuba	-	2 týdny z	-	4
Excursion 2	15EXK2	Zavadilová, Drtinová	-	5 dnů z	-	1
Research Project 1, 2	15VUCH12	Čuba	0+6 z	0+8 kz	6	8
Optional courses:						
Physical Chemistry 5	15FCH5	Silber	2+0 zk	-	2	-
Statistical Methods with Applications	01SME	Hobza	-	2+0 kz	-	2
Introduction to Photochemistry and Photobiology	15UFCB	Čubová, Juha	2+0 zk	-	2	-
Practical Exercises in Radioanalytical Methods (3)	15PRAM	Němec, Čubová, Špendlíková	-	0+4 kz	-	4
The Chemistry of Operation of Nuclear Power Plants (4)	15CHJE	Drtinová, Silber	2+0 zk	-	2	-
Isotop Syntheses	15ISY	Kozempel, Vlk	-	2+0 zk	-	2
Application of Radiation Methods (4)	15APRM	Múčka	-	2+0 zk	-	2
Protection of Environment (5)	15ZOCH	Filipská	2+0 zk	-	2	-
Radiation Methods in Biology and Medicine (6)	15RMBM	Čuba	2+0 z	-	2	-
Chemistry of the Pharmaceuticals (6)	15CHL1	Smrček	-	2+0 zk	-	3
Radiopharmaceuticals 1 (6)	15RDFM	Lebeda	2+0 zk	-	2	-
Practical Exercises in Radiation Methods in Biology and Medicine (6,7)	15PRMB	Kozempel, Vlk	-	0+4 kz	-	4
Practical Exercises in Microbiology (6)	15LMB	Demnerová	0+6 kz	-	4	-
Structure Analysis 1 (6)	15STA	Kozempel, Vlk	-	2+1 z, zk	-	3
Structure Analysis 2 (6)	15STA2	Kozempel, Vlk	2+0 zk	-	2	-
Toxicology (5,6)	15TOX	Kozempel, Vlk	2+0 zk	-	2	-

(1) Subscription of 15SEPM requires grading in 15SMJ1.
(2) Subscription of 15PRACH requires simultaneous subsription of 15RACH.
(3) Subscription of 15PRAM requires grading in 15RAM.
(4) Subscription of these courses recommended when the master thesis is related to the applied nuclear chemistry.
(5) Subscription of these courses recommended when the master thesis is related to the environmental chemistry and radioecology.
(6) Subscription of these courses recommended when the master thesis is related to the nuclear chemistry in biology and medicine.
(7) Subscription of 15PRMB requires grading in 15RMBM.

Master's Degree Program

Nuclear Chemistry

Year 2

Course	code	lecturer	win. sem.	sum. sem.	cr	cr
Compulsory courses:						
Radionuclide Production	15PRN	Lebeda	2+0 zk	-	2	-
Seminar 1, 2	15SEM12	Čubová	0+4 z	0+4 z	4	4
Master Thesis 1, 2 (1)	15DPCH12	Čuba	0+10 z	0+20 z	10	20
Optional courses:						
Chemistry of Radioactive Elements	15CHRP	John	2+0 zk	-	2	-
Separation Methods in Nuclear Chemistry 2 (2)	15SMJ2	Němec	-	2+0 zk	-	2
Application of Radionuclides 1 (3)	15NUK1	Mizera	2+0 zk	-	3	-
Application of Radionuclides 2 (3)	15NUK2	Mizera	-	2+0 zk	-	3
Technology of Fuel Cycles of Nuclear Power Stations (3)	15TPC	Čubová, Štamberg	2+0 zk	-	2	-
Waste Management and Treatment (3,4)	15TZO	Kubal	2+0 zk	-	2	-
Decomissioning of Nuclear Facilities (3,4)	15VJZ	Čubová	-	2+0 zk	-	2
Hydrochemistry (4)	15HCHE	Sýkora	2+0 zk	-	2	-
Waste Analysis (4)	15AODP	Janků	2+0 zk	-	2	-
Modelling and Simulation of Radionuclide Migration in Environment (4)	15MSZP	Vetešník, Vopálka	2+1 z, zk	-	3	-
Hydrology and Pedology (4)	15HYPE	Pokorná	2+0 zk	-	2	-
Determination of Radionuclides in Environment (4)	15SRZP	Němec	-	2+0 zk	-	2
Glykoconjugates and Immunochemistry (5)	15GIMCH	Pompach	-	2+0 zk	-	3
Radiobiology (5)	16RBIO	Davídková	-	2+0 zk	-	2
General Pharmacology (5)	15OFKL	Kršiak	2+0 zk	-	2	-
Biochemistry and Pharmacology (5)	16BAF	Eigner Henke, Kovář	2+0 zk	-	2	-
Radiation Protection (5)	16RAO	Vrba T.	4+0 zk	-	4	-
Radiopharmaceuticals 2 (5)	15RFM2	Kozempel, Moša, Vlk	2+0 zk	-	2	-
Radiopharmaceuticals Technology (5)	15TRF	Kozempel, Vlk	-	2+0 zk	-	2
Structure and Function of Bio-Molecules (5)	11SFBM	Kolenko	2+1 z, zk	-	3	-
Astrochemistry (3,4)	15ASCH	Ferus	-	2+0 zk	-	2
Theoretical Basics of Radiation Chemistry (3,5)	15TZRCH	Juha	2+0 zk	-	2	-

(1) Initiation of diploma project requires grading in 15VUCH2.
(2) Grading in 15SMJ2 requires grading in 15SMJ1.
(3) Subscription of these courses recommended when the master thesis is related to the applied nuclear chemistry.
(4) Subscription of these courses recommended when the master thesis is related to the environmental chemistry and radioecology.
(5) Subscription of these courses recommended when the master thesis is related to the nuclear chemistry in biology and medicine.

EXPLANATORY NOTES

for notations in the curriculum

The curriculum contains in each row

- course name
- shortcut used in the university database KOS
- name of the lecturer
- extent in the winter and summer semester
- credits in the winter and summer semester

In case the course spans over two semesters with different parts denoted by numbers, they can be contained in one row.

The extent of the course is indicated by number of teaching hours of the lecture + number of teaching hours of the lecture together with the indication of the grading (see later i nthis text). In case the teaching hours of the lecture and exercise are not distinguished, the course extent is indicated by one number.

STUDY AND EXAMINATION REGULATIONS FOR STUDENTS OF THE CZECH TECHNICAL UNIVERSITY IN PRAGUE FROM JULY 8 2005

Part one

FUNDAMENTAL PROVISIONS

Article 1

1. The Study and Examination Regulations for Students of the Czech Technical University in Prague (hereafter "CTU") are issued under section 17 (1) (b) of Act 111/1998 coll. on Higher Education and on Changes in and Amendments to some other Acts (the Higher Education Act), as amended (the "Act"), as part of the internal regulations of CTU and in accordance with the Statute of CTU. It contains rules for bachelor, master's and doctoral degree programmes offered at the faculties of CTU or at CTU.
2. Parts two, five and six apply to students who study in bachelor, master's and doctoral programmes in all forms of education.
3. Part three applies to students who study in bachelor and master's degree programmes in all forms of education.
4. Part four applies to students who study in accredited doctoral programs in all forms of education.
5. Students and applicants for study with special needs are entitled to appropriate adjustment of study conditions or modification of entrance examinations in accordance with their specific needs. These adjustments are governed by the "Methodological Directive on supporting students and applicants with special needs at CTU."
6. Students experiencing pregnancy, childbirth and parenting ("student-parents") are entitled to special adjustments for interrupting their studies, for extending the deadlines for fulfilling course requirements and for deducting recognized parenting time from the total time period for their studies. These adjustments are governed by the "Methodological Directive on supporting student-parents".

Part Two

INTRODUCTORY PROVISIONS

Article 2

Organisation of the Academic Year

1. In accordance with section 52 para. 2 of the Act, the rector sets the beginning of the academic year and, after discussion in the Rector’s Collegium, announces a mandatory schedule for the academic year of CTU.
2. The academic year is divided into winter and summer semesters and vacations.
3. The academic year schedule of CTU primarily sets the instruction period, the examination periods and periods of vacations and other academic activities.
4. The dean, or the director of an institute (hereinafter the "dean"), promulgates the timetable of the academic year for the faculty or for the university institute. The timetable, unlike the CTU academic year schedule, is supplemented by the period in which state examinations, entrance exams and other academic activities specific to the faculty or university institute are held.

Article 3

Programmes of study

1. CTU offers accredited degree programmes: the bachelor degree in accordance with Section 45 of the Act, the master’s degree in accordance with Section 46 of the Act, and the doctoral degree in accordance with Section 47 of the Act. The list of accredited degree programmes at CTU is published on the official notice board of CTU.
2. Study programmes are implemented at one or more faculty, or at CTU. University institutes of CTU may be involved in implementing degree programmes accredited by CTU (hereinafter programmes carried out at the university institute). The provisions in art. 4 para. 4, art. 15, art. 22 para. 1, art. 25 para. 1, art. 29 para. 4, art. 30 para. 8, art. 34 paras. 8, 9, art. 35 para. 2 and art. 36 para. 1 relating to the faculties are to be applied in a similar manner to the university institutes.
3. The lists of study programmes implemented by the faculty are posted on the notice board of the faculty. The lists of study programmes implemented at more than one faculty are posted on the official notice boards of all participating faculties. The lists of study programmes implemented at a university institute are posted on the official notice board of the respective institute.

4. The forms of study offered in the programme are:

   a) full-time study, in which instruction in the programme takes place with the student present in rooms and places where classes are taught

   b) distance study, in which instruction in the programme is carried out mainly on the basis of the student's individual work.

   c) combined study, in which instruction in the programme combines full-time and distance study. The amount of time for the full-time part of combined study must be stated for each course (hereinafter "course").

5. A study programme is usually divided into branches of study. A branch of study is a component of the study programme and consists of systematically organized courses.

6. The standard period of study is the period of study established by the study programme, expressed in years or semesters. During this period of time, a student with a standard study workload will complete his or her studies.

7. The period of study is a time period that begins with enrolment as a student after a successful entrance examination, and ends with completion of the programme in accordance with art. 34. The period of study includes all study interruptions. An exception is interruption due to recognized parenting time of student-parents, which is not included in the period of study.

8. The maximum length of studies in a bachelor or master's programme is set at twice the length of time of the standard period of studies. The maximum period for a doctoral programme is 8 years.

9. The period of studies may not exceed the maximum period of study in a particular degree programme. Exceeding this period of time is grounds for termination of studies under Art. 34, par. 7 (b). The decision-making process in this matter is governed by sec. 68 of the Act. In exceptional cases, and on the student's request, the dean can extend the maximum duration of study by not more than 6 months. A student may apply for an extension only once in a given bachelor or master's programme.

10. The longest overall period of study interruption (sec. 54 par. 1 of the Act) is such a period of interruption of studies as is in accordance with paragraphs 7, 8 and 9.

11. Studies in bachelor, master's and doctoral degree programmes may be undertaken in collaboration with a foreign university implementing a similar study programme. The terms of the collaboration are specified by an agreement between the participating universities. Studies can be carried out in collaboration among more than two universities.

12. Graduates of a study programme implemented in cooperation with a foreign university are awarded an the academic title in accordance with sec. 45 para. 4, sec. 46 para. 4 or sec. 47 para. 5 of the Act, and may also be awarded an academic degree of a foreign university according to current legislation in the respective country or state. The collaborating foreign university and, where relevant, the fact that the foreign academic title is a joint title also awarded simultaneously at the foreign university are specified in the diploma. Study programmes with collaboration among several universities are handled in the same manner.

Part Three

STUDY IN BACHELOR AND MASTER'S DEGREE PROGRAMMES

Article 4

Study Plan and Courses

1. The curriculum sets the time and the sequence of the courses in the form of a recommended time schedule for the studies, divided into academic years and semesters, and it respects the standard period of study. The study plan for a study programme can be conceived as having study profiles, as consisting of a single study discipline, as being multidisciplinary, or as being interdisciplinary.

2. The curriculum forms part of the documentation of the programme. The documentation of the study programme refers especially to the accreditation file, the regulations, the directives and orders of the dean for the implementation of the relevant study programme, etc. Major changes in the curriculum are discussed and approved by the research board of the faculty or by the CTU research board, in accordance with the principles of potential adjustments to the content of degree programmes and their branches of study within the period of valid accreditation.

3. The basic instruction module of the curriculum is a course, which is characterized by the number of lessons, by form of study in accordance with Article 7, by way in which it is of completed in accordance with article 6, and the number of credits awarded.

4. Before starting the study programme, the faculty shall publish the curriculum for the study programme, or the curriculum for the respective branches of study, i.e. a list of courses that must be taken as a necessary condition for proper completion of the study programme. The structure of the curriculum is as follows:

   a) It defines each course or group of courses, on the basis of its eligibility, as; obligatory, elective or optional,

   b) It defines the succession of courses, where necessary,

   c) It establishes the periods of study with obligatory verification (semester, academic year, block of studies),

   d) It determines the semester in which the course is usually offered.

Article 5

Credit System

1. The unified credit system is used to quantify the workload for each course.

   a) Each course is assigned a number of credits that is a measure of the relative amount of work by the student that is necessary for successful completion of the course,

   b) One credit represents 1/60 of the average annual workload of a student in accordance with the standard period of study and the recommended time plan for the studies,

   c) The workload for an academic year is usually represented by 60 credits,

   d) The value of the credits assigned for a course is an integral number,

   e) The credits awarded within a single study programme are added up, and the cumulative number of credits is a instrument for overseeing and assessing the studies.

2. The CTU credit system is compatible with the European Credit Transfer System (hereafter referred to as "ECTS") to facilitate student mobility within European educational programmes.

Article 6

Course Completion

1. Courses are completed by the award of credits for the course, by the award of classsified credits for the course, by passing an examination and by the award of credits, or by passing an examination. For courses where the curriculum prescribes the award of credits for the course and an examination, the award of the credits is a prerequisite for taking the examination for the relevant course.

2. The conditions for full completion of the course are registration for the course and

   a) the award of credits for courses completed by the award of credits

   b) passing examinations evaluated by grades A, B, C, D or E for courses completed by an examination,

   c) The award of classified credits evaluated by grades A, B, C, D, or E for courses completed by the award of classified credits.

3. After due completion of the course, the student is awared the assigned number of credits.

4. A student who has not completed a course in due manner, can enrol for a second time. The dean may, in justified cases, grant a student's request to authorize a second enrolment for an already-completed course. In this case, the classification for the first registration for the course is changed to a classified F grade.

5. The second registration for the course means registration for the same course in another language or in another form of study or in another study programme, hereinafter referred to as enrolment, which has been described as equivalent to or a substitute for that course in the curriculum.

6. A student may enrol for each course no more than twice.

Article 7

Provision and Organization of Education

1. The study activities of students consist mainly of their own individual work assigned and checked by teachers.

2. The forms of organized instruction are especially lectures, seminars, studios, projects, tutorials and exercises, laboratory exercises, guided consultations, professional practice, and field trips.

3. The forms of organized instruction are characterized as follows:

   a) Lectures consist of an explanation of the basic principles and the methodology of the discipline, sample problems and solutions to them.

b) Seminars, studios and projects are forms of organized instruction focusing on the application of knowledge from lectures and self-study in the presence of a teacher. An important part of this form of instruction is generally the presentation of results based on the student's own work, and a subsequent discussion.

c) Exercises mainly help to acquire practical mastery of the subject and its content presented in lectures or assigned for self-study, while the students participate actively. Specific types of exercises are experimental laboratory classes, working with computers, and instruction in the field. A check on the student's preparatory work at home may be a condition for satisfactory completion of the exercise.

d) Guided consultations are mainly dedicated to consulting and checking tasks assigned for self-study. They may replace an exercise or other forms of instruction.

4. Organized instruction is supplemented by individual consultations.
5. Attendance at lectures is recommended. Attendance at other forms of organized instruction is usually monitored, and the requirements for participation are set by the respective head of department or institute (herinafter the head of department).
6. Lectures are usually led by professors and associate professors. The dean may allow another member of the academic staff or a recognized expert to lead the lectures on the basis of a proposal put forward by the head of department in an justified case.
7. In accordance with sec. 3 points b) to d) of the Act, instruction may also involve students of doctoral programmes. Excellent students in a master's degree programme may be entrusted with instruction in a bachelor's degree programme by the teacher responsible for the course, if approval is granted by the head of department.

Article 8

Verification of Study Results

1. Study results are verified by continuous assessment of studies and on completion of the course by the award of an unclassified credit, or by the award of classified credits, by passing an examination, or by a combination of the award of credits and passing an examination. During verification of the results, students must identify themselves at the request of the lecturer. A valid identity card, a passport, a driving license or a student ID can be used as an identification document.
2. The dean sets final deadlines for granting unclassified credit or classified credits for the completion of courses registered in the relevant semester or academic year, and for passing examinations.
3. In relation with child care, a student-parent has the right to prolong the deadlines for fulfilling course requirements, and also for fulfilling the conditions for advancing to the next semester, year or block of studies. The deadline can be prolonged by the same amount of time as taking parental or maternity leave would take, if the studies are not interrupted during the period.
4. A serious violation of the rules on verifying study results can be considered as a disciplinary offence.

Article 9

Unclassified Credit and Classified Course Credits

1. Unclassified credit for a course confirms that the student has fulfilled specific requirements stated at the beginning of the course.
2. Classified course credits are credits for fulfilling the course requirements and for presenting the results as set out at the beginning of the course. The level of the student's performance is evaluated by the assessment grade awarded in accordance with Art. 11.
3. A student who has failed to obtain unclassified credit or classsified credits may apply to the head of department for a review of her/his case. The matter of granting unclassified credit or classified credits is decided by the head of department. If a student did not obtain unclassified credit or classified credits for a registered course, she/he may register for the course again. If the second registration for a mandatory course or an elective course does not end by obtaining the credit, the studies will be terminated in accordance with sec. 56 para. 1 point b) of the Act and under Art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.
4. The award or the non-award of credit is entered into the electronic information system of CTU. When credits are entered into the electronic information system of CTU, the assessment grade is also entered, including F grade assessments. Entries into the electronic information system of CTU are made without delay by a teacher or by a person authorized by the head of department.
5. The department is required to keep its own written records on the results of unclassified credits and classified credits, independent of the electronic information system of CTU, and to archive them for a minimum of ten years.

Article 10

Examinations

1. An examination tests the student's knowledge of the course content listed in the documentation of the course and presented during instruction at a level corresponding to the completed part of the studies, and the ability to apply the acquired knowledge creatively. The teacher evaluates mastery of the issues covered by the course by awarding a grade ccording to Art. 11.
2. The examination can take a written form, an oral form, or a written and oral form (combined).
3. The dates and the location of examinations, and also the way to register for the examination, and also the form of the examination must be published in advance and in a reasonable manner by teachers of the department. The head of department is responsible for the overall organization and publication of the rules for examinations.
4. A student who has received an F grade assessment for the examination can resit the examination. If the student receives an F grade in the first resit, she/he may retake the examination in the second resit, provided that the number of second resits for all course enrolled in the studies may not exceed twice the standard number of years of study. No further resits are permissible.
5. If the second registration for a compulsory or compulsory elective course does not end with due completion of the course under Art. 6, para. 2, the studies will be terminated in accordance with sec. 56 para. 1 point b) of the Act and Art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.
6. The assessment for the examination (including an F grade assessment) will be entered without delay into the electronic information system of CTU by a teacher or by an authorized person.
7. Students have the right to not accept an examination result. In this case, the examiner will award an F grade for the examination .
8. The organization of the examinations and decisions on the justification for explanations for not participating in the examination reside with the teacher, in accordance with orders of the head of department. If a student registered for an examination does not properly apologise for her/his absence or deregister in time, he or she will receive an F grade.
9. At the request of a student or an examiner, resit examinations are held in front of a three-member board appointed by the Dean on the proposal of the head of department. In the case of written tests, the evaluation is made by the above-mentioned board. If the examiner is the head of the department, the commission is proposed and appointed by the dean.
10. The department is required to keep its own written records of the results of examinations, independent of the electronic information system of CTU, and to archive them for a minimum of ten years.

Article 11

Scale of Assessment Grades

1. A mandatory grading scale of is used when evaluating studies, according to the following table.

Grade	A	B	C	D	E	F
Evaluation by points	100 - 90	89 - 80	79 - 70	69 - 60	59 - 50	< 50
Numerical classification	1,0	1,5	2	2,5	3	4
Verbal in Czech	výborně	velmi dobře	dobře	uspokojivě	dostatečně	nedostatečně
Verbal in English	excellent	very good	good	satisfactory	sufficient	failed

2. For the purposes of compatibility with the scale used earlier, CTU applies the following conversion table.

Former scale	Numerical classification	1	2	3	4
	Verbal	excellent	very good	good	failed
	Evaluation by points	100–86	85–70	69–50	49–0
Current scale	Číselná klasifikace	1	2	3	4
	Klasifikační stupeň	A	C	E	F

Article 12

Weighted Average Results

1. The grade average of a student studying in a given unit of study (semester, academic year or other defined study block) are expressed by the weighted study average (VP), which is defined by the following formula.

$$VP = \frac{\sum_{p} K_p Z_p}{\sum_{p} K_p}$$

kde

K_p is quantity of credits for course *p*,

Z_p is numerical classification of course *p*,

p the set of all courses completed by an examination or by the award of classified credits that the student has completed within a given study unit, in accordance with art. 6.

2. The study average, as determined in accordance with para. 1, shall be rounded to two decimal places.

Article 13

Study Arrangements

1. An applicant becomes a student on the day of enrolment in a study programme. Registration is held at the faculty where the corresponding study programme takes place or, in some cases, at CTU. If the study programme is delivered at more than one faculty, a student registers only for the faculty which was responsible for his admission procedure. Registration proceeds on dates determined by the dean.
2. Matriculation involves entering students into the student register. Matriculation includes the matriculation oath, which the student confirms in writing by her/his signature. The wording of the matriculation oath is given in Appendix no. 5 of the Statute of CTU. A matriculation oath ceremony is organized by the faculty.
3. A student has the right to participate in lectures, tutorials, seminars, workshops, practical training, laboratory work, field trips, consultations and other forms of instruction in the framework of a registered study programme curriculum or branch of study in accordance with the study regulations and under art. 7. A student also has the right to earn unclassified credit and classified credits, and to take examinations.
4. If a student fails to present herself/himself on a specified date to register for the semester, for the academic year or for a block of study, or does not register at all, without stating the reasons by sending a written apology within five days of the appointed time, this will be considered as failure to meet the requirements arising from the study programme, and the student's studies will be terminated in accordance with sec. 56 para. 1 point. b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act. If the student submits a written apology within five days from the registration date, and if the written apology is accepted by the dean, the student will be granted a substitute date for registration.
5. Studies in a study programme may be interrupted repeatedly. Interruption of studies is allowed by the dean on the basis of a written application submitted before the instruction begins. The dean will comply with the request if the period covered by the application is a part of the recognized parenting time of a parent-student. The dean may on her/his own initiative interrupt a student's studies for the following reasons:

   a) if it is necessary in order to prevent imminent harm to the student, and if the origin of this harm is not related to the previous fulfilment of study requirements. Studies will not be interrupted if within 10 days of receiving written notice about possible interruption of her/his studies the student expresses her/his disagreement in written form.

   b) if the student was required to pay a fee associated with the studies in accordance with sec. 58 para. 3 or 4 of the Act and the student fee (the amount and the terms are set by a final decision after any corrections have been applied) has not been paid,

   c) if an alternative date is set for the state final examination in accordance with Art. 17 para. 3, or a date for resitting the state final examination under art. 17 para. 4.
6. The minimum period of interruption is one semester; in exceptional cases the time period of the interruption may be shorter. During the period of interruption, a person is not classified as a student. During the instruction period or the examination period, studies may be interrupted only for serious reasons. Interruption of studies cannot be enabled in cases when, after resuming the studies after an interruption, the student’s studies would be terminated immediately in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The dean's decision

on interruption of studies is governed by sec. 68 of the Act. The written decision of the dean is recorded in the electronic information system of CTU and is filed in the documentation on the student. The decision to interrupt the studies includes a statement of: the date when the interruption of the studies will begin, the date when the interruption of the studies will end, and the date of re-enrolment.

7. Except for serious reasons, especially reasons regarding health or pregnancy, childbirth or parenting, studies may be interrupted only after successful completion of the first academic year.

8. On expiry of the period for which the studies were interrupted, the person to whom the study interruption was granted has the right to re-register on a date set by the dean. The person whose studies were interrupted becomes a student on the day of re-enrolment. If a student fails to register on the given date without stating the reasons in a written apology within five days of the given date, this will be considered as failure to meet the requirements arising from the study programme, and the student's studies will be terminated in accordance with sec. 56 para. 1 point. b) of the Act and Art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act. Missing the deadline can be pardoned by the Dean in justified cases. If the reasons for interrupting the studies are no longer in effect, and in the cases of persons with recognized parenting time, the dean may, on the basis of a written request from the person whose studies have been interrupted, terminate the interruption of studies before the expiry of the period of interruption and set a date for re-registration.

9. On the basis of a written request from the student, the dean may allow one or more academic years to be completed in an individual study plan. The course and conditions of the individual study plan are also set by the dean. Other provisions of these regulations, including the standard study period, the maximum duration of studies and termination of studies are not affected. Failure to comply with the obligations set out in the individual study plan is a reason for terminating the studies according to sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.

10. A student who has been enrolled in the same study programme or in a similar study programme, which she/he has studied in the past at any college or university may, on the basis of a request to the dean, have a unit of study (semester, academic year or block) or individual courses acknowledged (recognized), provided that the time since their completion is not more than five years. Recognition may be conditional on passing examinations.

11. A student who is sent by CTU to study at a foreign university will have his courses and credits earned at the foreign university recognized if they correspond with the content of her/his study programme. Recognition of courses and credits is decided on by the dean.

Article 14

Checks on Studies and Conditions for Continuation of Studies

1. Checks on studies are carried out within the time periods specified in the curriculum of the study programme - semester, academic year, study block.

2. Methods of assessments are set out in the documentation of the study programme, including conditions for successful completion of the study programme. If a student has not passed one or more of the checks on her/his study duties during her/his studies, the studies will be terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.

3. The dates and the organization of registration for individual study units within specific time periods are set by the dean.

4. The minimum number of credits that must be earned in order to continue in the studies:

Period of study	Bachelor study programme	Master's study programme
credits for the first study semester	15	20
credits for the first academic year (2 semesters)	30	40
for each subsequent academic year of study (2 semesters)	40	40
for each subsequent academic year of study (2 semesters), if a student did not participate in the relevant study programme for a part of the academic year (interruption of studies, transfer)	20	20

The number of credits obtained includes only credits for the courses listed in the curriculum of the study programme, or the branch of study in which the student is enrolled.

5. Different numbers of credits can be set by the Dean from the number stated in para. 4, in accordance with art. 13 paras. 9 to 11, or if the student is needs fewer than 40 credits to achieve the total required amount of credits for completing her/his programme in the corresponding academic year.

6. Credits for courses registered and recognized by art. 13 para. 10 are not considered as credits earned in this semester, academic year or block of study. They are only included in the total sum of credits earned by the student.

7. Verification of the number of credits is made for each study unit: a semester, an academic year or a block of study in accordance with the curriculum of the study programme. A student who has failed to obtain the minimum number of credits under paras. 4-6, will have her/his studies terminated for not meeting the requirements under sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.

Article 15

Transfers

1. After successful completion of the first academic year, students may request a transfer to another study programme at the same faculty or at any other faculty of CTU. Students of CTU will be permitted to transfer only if they meet the conditions for advancement to the next semester or academic year at the their original faculty. Other conditions and decisions regarding transfers are the responsibility of the dean of the receiving faculty; this also applies to the process of placing the student in a particular study unit according to the recommended time schedule of the study programmes offered at the receiving faculty. The same conditions also apply to transfers from other universities in the Czech Republic, or from a foreign university.

2. The dean of the receiving faculty may recognize completed units of study or individual courses of the transferring students on the basis of a request from them under art. 13 para. 10.

3. The dean reaches a decision on the transfer to another branch of study within the same study programme, and also on a transfer to another form of study within the same study programme.

4. When students transfer in accordance with para. 3, the total study period includes the time elapsed since registering for the original study programme implemented by the faculty.

5. When students transfer under para. 1, the duration of the studies under art. 3, para. 7 includes only the period of study since enrolment in a study programme after transferring, extended by periods corresponding to recognized study units, in accordance with para. 2.

6. In her/his decision to allow a transfer, the dean of the receiving faculty will determine the recognized periods of study referred to in para. 4 or 5.

Article 16

State Final Examination

1. Studies in bachelor and master's degree programmes are completed by the final state examination, which is held before an examination board. Its proceedings and promulgation of the results are open to the public.

2. The president, the vice-president and the members of the examination board are appointed by the dean from among professors, associate professors and other specialists approved by the Scientific Council. The Ministry of Education, Youth and Sports (hereinafter the Ministry) may appoint further board members from among leading experts in the given field. The proceedings of the state final examination shall be documented in the final examination report, signed by the chairman and all members of the examination board who were present. Multiple examination boards can be set up for a single study programme or branch of study. The minimum number of members, including the president, is 5.

3. The state final examination consists of several parts, each of which is assessed separately:

   a) The presentation and defence of a bachelor or diploma thesis,

   b) examinations in vocational and technological subjects or topics,

   c) any other parts in accordance with para. 5.

   Individual parts of the state final examination may take place on various dates. Examiners evaluate the results of the presentation and defence and the examinations in a closed session.

4. For a study programme delivered in Czech language, the bachelor or diploma thesis will be written in Czech, Slovak or English language. For programmes with instruction in a foreign language, the bachelor and diploma thesis are written in the language of instruction or in English. The presentation and defence of a bachelor project forms a part of the final state examination in a bachelor study programme, and the presentation and defence of a diploma thesis forms a part of the final state examination in a master's program. If a student fails to submit a

diploma thesis or a bachelor thesis within the set deadline and reasons for this were presented in the form of a written apology in advance, and if the apology was accepted by the dean, the dean will set an alternative date for submitting the bachelor or diploma thesis. If a student fails to submit and apology, or if the excuse is not accepted by the dean, the student may register for a bachelor or diploma thesis for a second time.

If, after registering for a second time for a bachelor or diploma thesis as an element within the framework of her/his study programme, the student fails to submit the thesis within the specified time, and fails to provide a proper apology, or if the dean does not recognize the apology, her/his studies will be terminated in accordance with sec. 56 para. 1 point b) of the Act and Art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.

5. The elements and the individual topics or thematic areas of the final state examination are set by the study programme. Individual parts of the final state examination should take not more than 1 hour.
6. The conditions for admission to the final state examination or to parts of the final state examination are set in the documentation of the study programme.
7. The dates on which the final state examination or parts of the final state examination are held are set by the dean.
8. If a student fails to attend the final state examination on the specified date or on the alternative date, without stating the reasons for her/his absence in a written apology, or if the apology is not accepted by the dean, the student will receive an F grade. Failure to comply with the five-day deadline may be pardoned by the dean in the case of serious circumstances, especially if it is a matter of the student's health.
9. The state final examination or the last part of the state final examination, including any repeated parts, must be undertaken by the student in within 1,5 years of the date when all other requirements stated in the student's study programme were completed. Failure to pass the final state examination within this period shall be considered as not meeting the requirements of the study programme according to sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act. The day of completion of all other requirements of the study programme is the last day of the examination period of the last semester in which the student registered for courses listed in the curriculum for the study programme, or the branch of study, for which the student was registered.
10. The state final examination, or the last part of the state final examination, must be completed within the deadline given by the maximum period of study referred to in art. 3 para. 8. If a student fails the final state examination in this way, her/his studies will be terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34, paragraph. 7 point. b). The decision-making process in this matter is governed by § 68 of the Act.
11. The examination board has a quorum if a majority of its members are present, including either the president or the vice-president. In the event of a tied vote, the president's has the casting vote.
12. A meeting of the board of examiners is led by the president or the vice-president. The procedural rules for examination boards are set out in a dean's directive.
13. The method for registering students for the final state examination and for the organisational measures for guaranteeing final state examinations are determined in a dean's directive.

Article 17

Assessment of the Final State Examination

1. Individual parts of the state final examination and the state final examination as a whole are assessed in accordance with art. 11 para. 1. The state final examination or any part of it can be repeated only once.
2. The final result of the state final examination is set by the board of examiners on the basis of an evaluation of all parts of the state final examination, including thepresentation and defence of a diploma thesis or a bachelor thesis. If any individual part of the final examination was evaluated by an F grade, the overall outcome of the final state examination is evaluated by an F grade.
3. A substitute date for the final state examination will be set by the dean, if a student submits a written apology for her/his absence on the date or on the alternative date for the final state examination within five days, and if the apology is accepted by the dean.
4. A date for repeating the final state examination will be set by the dean if:

   a) The student failed to present herself/himself on the date of final state examination and if her/his absence was not properly justified by submitting a written apology within 5 days, or if the apology was not accepted by the dean, or

   b) if the overall result of the final state examination was evaluated with an F grade.
5. Only the parts of final state examination with an F grade are repeated. If the presentation and defence of bachelor or diploma thesis was evaluated by an F grade, repetition of the final examination is conditional on the bachelor or

diploma thesis being reprocessed. The manner and the extent of the reprocessing is decided by the Dean, on the basis of the opinion of the board of examiners.

6. If the second attempt at the final state examination is evaluated by an F grade, the studies are terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is regulated by sec. 68 of the Act.
7. The student must be informed in a verifiable manner about the results of each part of the state final examination referred to in art. 16 para. 3 points a) to c), including the overall outcome of the final state examination.

Article 18

Overall Study Result

1. The overall results of the studies are evaluated in terms of assessment grades:

   a) graduated with distinction,

   b) graduated.
2. The overall result of duly completed studies is assessed as "graduated with distinction" if the student achieved an overall weighted study average of no more than 1.50 in the bachelor programme, or a maximum of 1.30 in the master's study programme in accordance with art. 12, and if the overall result of the final state examination was evaluated by an A grade.
3. The overall study result is stated on the university diploma and in documents verifying due completion of the studies.

Part Four
STUDIES IN DOCTORAL DEGREE PROGRAMMES

Doctoral studies constitute the highest form of education, which prepares its graduates for dealing with difficult tasks, especially for independent scientific work in fundamental, applied and experimental research.

Article 19

Organization of Doctoral Studies

1. Doctoral degree programmes are carried out according to an individual study plan (hereinafter "ISP"), in accordance with Art. 26 and under the guidance of a supervisor. The body of experts responsible for making evaluations during the studies are, in particular, the subject area boards, whose actions are governed by art. 21 and sec. 47 para. 6 of the Act.
2. Doctoral degree programmes are implemented in forms which are listed in art. 3 para. 4. The maximum period of study in all its forms is set out in art. 3 para. 8.
3. A doctoral student training unit (a department, a university institute involved in instruction in a doctoral programme, an external workplace) is a place where the professional part of the study programme is carried out.
4. The standard period for doctoral study programmes is at least three to four years. The length of the programme is determined by the time approved for individual accredited study programmes and branches of study.
5. Students enrolled in programmes with a three-year standard period of studies may have their full-time studies extended by a maximum of one year.
6. Study in distance form or in combined form may be extended up to the maximum study period.
7. It is possible to graduate from a doctoral degree programme within a shortened period of time on the basis of an approved Individual Study Plan, in accordance with Art. 26.
8. The dissertation must be submitted within 7 years after enrollment in the study programme. A student who has failed to submit her/his dissertation within this time period and without a proper apology, or if the apology was not accepted by the dean, will have his/her studies terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34 para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act. The studies must be completed within 8 years after enrolling for the studies, in accordance with art. 3 paras. 7 and 8. In exceptional cases, the dean can extend the maximum period of study, on the grounds of an extended procedure for presenting and defending the dissertation.
9. The periods referred to in para. 8 shall be extended by recognized parenting time of student-parents in accordance with the Act.

Article 20

Adjustments to Regulations for the Study Programmes of Faculties

1. A faculty may have in its Statute of a internal regulation of limited scope called "Code of doctoral studies".
2. The code of doctoral studies may not be in contradiction with this regulation, but may determine further details of doctoral degree programmes, for example a credit system or the rules and deadlines for study assessments.
3. Failure to meet the requirements set down by the doctoral study code is considered as a failure to meet the study requirements of the study programme arising from the Study and Examination Regulations, and constitutes grounds for terminating the studies in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.

Article 21

Subject Area Boards

1. The Subject Area Board for studies in a doctoral programme (hereinafter referred to as "ORP") is a basic professional, auditing and evaluating body for studies (sec. 47 para. 6 of the Act). The board is responsible to the respective Scientific Council. The president of ORP is usually the guarantor of the doctoral study programme.
2. If the studies in a doctoral programme are divided into branches of study, separate subject area boards can be established for these branches (hereinafter "ORO"). These boards provide professional assessments within these branches of study. ORO and ORP activities are defined in paras. 6 to 9. The president of ORO is generally the guarantor of the doctoral branch of study.
3. ORP has at least five members, of which at least two members are not employees of CTU; presidents and vice-presidents of ORO are automatically counted as members of ORP. Each ORO has at least five members, of which at least two members are not employees of CTU.
4. The membership of ORP and ORO may consist of professors, associate professors and other distinguished experts. Members of the ORP or the ORO of a doctoral study programme implemented at one faculty only are appointed and dismissed by the dean, after approval by the scientific council of the faculty, on the basis of a proposal for a doctoral student training unit, or by the dean. Members of the ORP or the ORO of a doctoral study programme implemented at several faculties or at a university institute are appointed and dismissed by the rector after approval by the scientific council of CTU, on the basis of a proposal from the Scientific Councils of the faculties or institutes of CTU, or on the basis of a proposal from an external training unit.
5. The president of ORP, or of ORO, is elected from among the ORP members, or ORO members.
6. ORP in particular:

   a) checks and evaluates the ongoing studies in a doctoral programme; results are presented at least annually to the respective scientific council,

   b) takes care of updating and developing the doctoral programme and its branches of study,

   c) initiates proposals for adjustments, or for constituting new branches of study within the doctoral programme,

   d) if OROs are not established, ORP performs ORO's functions in accordance with para. 7.
7. ORO in particular:

   a) before an applicant is accepted, approves proposals from leading training workplaces for a doctoral student on general topics or topic areas for dissertations and supervisors for these topics; after an applicant has been accepted, on the supervisor's proposal ORO also approves the appointment a specialist supervisor under Art. 24 para. 1,

   b) approves an Individual Study Plan, and changes to it, according to Art. 26 para. 1, para. 3, and para. 6,

   c) approves the proposal for the composition of the entrance examinations boards in accordance with art. 6, para. 4 of the Admission Procedure Rules of CTU, discusses the composition of the commissions for state doctoral examinations in accordance with art. 29 para. 2, and commissions for the presentation and defence of dissertations in accordance with art. 30 para. 3,

   d) approves external examiners for dissertations under art. 30, para. 4,

   e) checks and evaluates the ongoing studies in the branch of study of the doctoral programme; Results are presented to ORP at least annually, in accordance with para. 9.
8. ORO may issue an approval in accordance with para. 7 points a) to d) on the basis of a proposal of ORO's president in electronic form.

9. ORP or ORO meets when the need arises, but at least once a year, and the meeting is led by its president. At a meeting of ORP, the presidents of OROs submit overviews of the activities in individual branches of study in the form of a written report. The meeting and all resolutions of ORP are documented in a written report, which is submitted to the dean or to the rector and to the heads of the training units. ORP and ORO can decide at a distance, for exampe by means of electronic voting.

10. If no ORP has been established, the relevant Scientific Council takes over its functions, in accordance with para. 6.

11. If ORO takes no action in any of the matters referred to in para. 7 for a period of time longer than 60 days, the dean may submit the matter to ORP, which may make a decision instead. The dean will notify the appropriate scientific council about this fact at its next meeting.

Article 22

A Student in a Doctoral Study Programme

1. An applicant becomes a student in a doctoral study programme (hereinafter a "doctoral student") on the date of enrolment in a doctoral study programme. Registration is held at the faculty at which the study programme is implemented. Registration is performed within the deadline set by the dean. A doctoral student is a member of the academic community of the faculty and of CTU, and the rights and obligations for the respective form of study, arising from the Act and from the internal regulations of CTU, apply to her/him. The basic obligation arising from the studies is to fulfil the Individual Study Plan under the guidance of a supervisor.

2. A doctoral student is entitled to six weeks of leave in a calendar year.

3. A doctoral students may interrupt her/his studies after submitting a written request addressed to the dean, in accordance with art. 26 para. 6 point c). The request contains reasons for the interruption and the duration of the interruption. The dean will comply with the request for an interruption, if the period covered by the request is part of the recognized parenting time of a student. No interruption is permitted if the studies must be terminated immediately after resuming the studies, in accordance with sec. 56 para. 1 point. b) of the Act and under art. 34, para. 7 point b). The dean may interrupt the doctoral studies on his own initiative, if this is necessary to prevent imminent harm to the doctoral student. The origin of this harm may not be related to the previous fulfillment of study obligations. In this case, the studies will not be interrupted if the student within 10 days of receiving written notice of the possibility of an interruption expresses her/his disagreement in writing. The dean may also interrupt the doctoral studies on his own initiative until the date for retaking the doctoral state examination or the presentation and defence of a dissertation. The dean's decision to interrupt the studies must be made in writing, in accordance with sec. 68 of the Act, and the student may request a review of the decision within 30 days.

4. Once a year, the doctoral student is required to be present on a specified date to enrol in the next study unit. Registration is conditional on the submission of a statement of activities, which must be approved by the supervisor, the head of the training unit and the president of ORO. If the student fails to be present on this specified date without stating the reasons by sending a written apology within five days of the enrolment date, this will be deemed as failure to meet the requirements arising from the study programme, and the student's studies will be terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act. If the doctoral student submits a written apology within five days of the date of registration and the apology is accepted by the Dean, the dean sets a substitute registration date for the student.

Article 23

Supervisor

1. The supervisor is the guarantor for the student's professional programme and for the topic of her/his dissertation. A doctoral student has consultations with the supervisor mainly on matters related to her/his studies. The supervisor has the right to attend all meetings regarding the doctoral student's studies, including any hearing of the disciplinary board.

2. Professors, associate professors and doctors of science (Dr.Sc.) may be supervisors. Other prominent experts can also be trainers after approval by the relevant scientific council upon the dean's or rector's proposal.

3. Through the head of the training unit, the supervisor usually proposes a general topic or topics for the dissertation. After approval of ORO under Art. 21, para. 7 point a), the topic is listed in the admission procedure. The supervisor participates in the admission procedure of applicants for the dissertation topic proposed by the supervisor. During the entrance examination, the supervisor has the right to veto decisions to admit these applicants to study the proposed topic.

4. The head of the doctoral student training unit submits a proposal for the appointment of a supervisor for a specific doctoral student after the approval of the supervisor has been received. The specific supervisor for a given dissertation topic and for the admitted doctoral student is appointed by the dean.

5. In cases where it is proven that the supervisor does not carry out her/his duties, he or she may be dismissed. The dismissal is carried out by the dean on the proposal of the president of ORO and after agreement with the head of the doctoral training unit.

6. The supervisor participates in discussions, in the state doctoral examination ("SDE"), and in the presentation and defence of the dissertation of her/his doctoral student, including those parts conducted behind closed doors.

   She/he may not be a member of the SDE board, or of the board responsible for the presentation and defence of the dissertation that makes decisions about the supervisor's doctoral student.

7. During the period of the studies, and in accordance with the amount of creative cooperation with the student, the supervisor is considered to be a co-author of the results of doctoral student's activities.

8. A supervisor may not simultaneously supervise more than 5 doctoral students. The dean may allow this number to be exceeded in the case of an individual supervisor, on the basis of a proposeal from ORO based on the results of the supervisor's doctoral students.

9. The supervisor checks on an ongoing basis that the doctoral student has been fulfilling her/her Individual Study Plan regularly; at least once a year, the supervisor submits a written evaluation of the student's fulfilment of her/his ISP to the head of the training center and to the president of ORO.

10. The supervisor leads dissertation projects only on topics in which she/he is an expert. It is not possible to apply for a supervisor to be appointed for any other topic.

Article 24

Specialist Supervisor, Study Guarantor

1. If the topic of the dissertation requires specific guidance or professional consultations which cannot be provided by the supervisor, a specialist supervisor will be appointed. On the basis of an agreement with the supervisor, the specialist supervisor provides professional education for the doctoral student. A specialist supervisor is usually a prominent expert nominated by the supervisor. A specialist supervisor is appointed by the dean after approval from ORO.

2. If the supervisor does not work for CTU (for example, if she/he works at the Academy of Sciences of the Czech Republic) and the doctoral student carries out creative work in the supervisor's training unit, a study guarantor is appointed by the dean on the basis of a proposal from the head of the CTU workplace at which the doctoral student is registered. He/she provides the necessary coodination with CTU and participates in guiding the doctoral student, particularly in the study block period.

Article 25

Organizational and Technical Measures for Studies in a Doctoral Programme

1. Administrative aspects of studies and the agenda of doctoral students in the doctoral study programme are handled by the department of science and research at the faculties (hereinafter "SR department").

2. The lectures for specialized and professional courses within the study block are generally led by professors and associate professors.

   In justified cases, on the basis of a proposal from the head of department, the dean may entrust another member of the academic staff or a recognized expert with leading the lectures.

Article 26

The Individual Study Plan, and Amendments to it

1. The Individual Study Plan is the basic document for the individual professional education of a doctoral student in a doctoral programme. It is compiled by the doctoral student in agreement with the supervisor. ISP is submitted for approval to the president of ORO within a period of one month after the commencement of the studies. ISP becomes obligatory after it has been approved by ORO.

2. The ISP specifies the content and the time schedule for the study block under art. 27, and also specifies the separate research component of the student's activities related to the preparation of her/his dissertation, in accordance with art. 28. The content of the ISP is set out in an obligatory official form.

3. The ISP is amended every year, and is submitted to the president of ORO together with the annual evaluation of the doctoral student.

4. The title of the dissertation and its contents are determined under art. 28 para. 3, and this is added to the ISP.

5. A component of the ISP of a doctoral student in a full-time study programme is teaching practice, undertaken primarily to develop the student's presentation skills. This practice is carried out in four semesters, with an average

of 4 hours per week. Exceptions to this teaching practice are allowed by the head of the training unit, after agreement with the supervisor.

6. Amendments to the ISP or to the studies in the study programme may involve:
a) a change in the content of the ISP - the proposed amendment to the ISP is approved by the president of ORO on the basis of a proposal from the supervisor in connection with the annual specification of the ISP, or on some other occasion,

b) a change in the time schedule of the ISP (extension of studies) - granted by the dean on the basis of a recommendation by the supervisor and the head of the training unit; the supervisor submits the proposal to adjust the schedule of the ISP with the approval of the president of ORO,

c) an interruption of studies - granted by the dean on the basis of a request from a doctoral student that has been discussed with the supervisor and with the head of the training unit,

d) a change in the form of study - granted by the dean on the basis of a recommendation from the supervisor and the head of the training unit; the supervisor submits a proposal to adjust the ISP, with the approval of the president of ORO,

e) a change of supervisor - granted by the dean with the approval of ORO on the basis of a request from the doctoral student or from the supervisor.

7. Changes under para. 6 point a) are submitted by the supervisor after agreement with the doctoral student. Changes under para. 6 points b) to e) can be considered only on the basis of a written request of the doctoral student addressed to the dean.

8. The ISP complies with standard period of study.

Article 27

Study Block

1. A study block is a study unit in the course of which the doctoral student deepens her/his theoretical and professional knowledge related to her/his branch of study in the doctoral programme and in relation to the topic of the dissertation. It consists of a set of professional courses in accordance with paras. 3 and 5, linguistic preparation undertaken on the basis of para. 2, professional activities presented in a written study, and a discussion on the dissertation in accordance with paras. 6 and 7.
2. The linguistic preparation is checked by an examination in at least one foreign language (usually English), or by presenting a certificate of language proficiency recognized by the relevant department of languages.
3. The compulsory professional courses take one semester and are listed in the ISP. There are four to six courses; the ISP may also determine how these courses will be completed (attendance at lectures, self-study and consultations). Each compulsory course is completed by an examination, or by an equivalent in the case of foreign universities.
4. After agreement with the supervisor, a doctoral student may also attend other elective courses, which may not always be completed by an examination.
5. The set of compulsory professional courses referred to in para. 3 may in exceptional cases include up to two courses from a master's programme, when a doctoral student demonstrates substantial lack of knowledge in a field study covered by the course, and if the doctoral student did not take the course during her/his master's programme. In addition, the ISP may contain courses offered at another university.
6. The courses in the study block and the results certifying that they have been taken (an examination in the case of mandatory courses, and an examination or an unlassified assessment in the case of elective courses) are entered into the CTU information system. A list of the courses is entered into the information system after the ISP has been approved.
7. The course examinations and the language examinations are evaluated on the grading scale "excellent", "pass", "fail".
8. If the result of a course examination is "fail", the doctoral student may repeat the exam, but only once. The supervisor is present during the second attempt at the examination. If the same course is again evaluated with a "fail" grade, the studies are terminated in accordance with sec. 56 para. 1 point b) of the Act and Art. 34, para. 7 point b). The decision-making procedures in this matter are governed by sec. 68 of the Act.
9. A component of the professional activities within the study block of is a written study which serves as preparation for the dissertation. It contains a brief overview of the topic to be studied (a research summary), supplemented

by the results of the student's own work on the dissertation topic. These results can be presented as a set of publications submitted by the doctoral student.

10. The written study forms the topic of a discussion about the dissertation and serves as a basis for the final title and content of the dissertation. The participants in this debate are the supervisor, the head of the training unit and a member of ORO, recommended by the president of ORO; the discussion can be held in a foreign language. The head of the training unit provides at least one external examiner of the written study.
11. In the ISP, the study block is divided into a maximum of 4 semesters for full-time study or a maximum of six semesters for distance or combined studies. A doctoral student who fails to meet all requirements in the study block by the end of the 6th semester after commencing her/his studies, in the case of full-time study, or by the end of the 9th semester in the case of distance or combined study, will have her/his studies terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making procedures in this matter are governed by sec. 68 of the Act.

Article 28

Dissertation

1. A dissertation is the outcome of work done on a particular scientific or artistic task; it demonstrates the doctoral student's ability to work independently in a creative way, and must contain original conclusions from and results of scientific or artistic work, or other approved results published by the author of the dissertation.
2. A general topic or topical area of the dissertation is offered before the admission procedure on the basis of a proposal by the future supervisor, following the recommendation of the head of the training unit and with the approval of ORO. A more specific definition of the topic within the topic area can be made in agreement between the supervisor and the applicant.
3. The title of the dissertation, and also its contents, ares set down before the conclusion of the study block, on the basis of submitted studies and discussions on the topic of the dissertation, in accordance with art. 27 para. 7.
4. A set of publications or manuscripts, provided with an integrating text, can be recognized as a dissertation.
5. Dissertations are written in Czech, Slovak or English language. Applicants may, with the approval of the president of ORO, submit the dissertation in one of the other world languages. Other formalities concerning the dissertation are set out in an obligatory regulation by the dean of the faculty at which the study programme is offered. If the dissertation does not fulfill these formalities, it may not be accepted by the department of science and research for further proceedings. In cases of doubt or confusion, the decision rests with the dean.

Article 29

State Doctoral Examination

1. The aim of the state doctoral examination ('SDE') is to verify the range and the quality of the doctoral student's knowledge, her/his ability to acquire new knowledge, to evaluate it and use it in a creative manner in relation to the field of study chosen for the doctoral study programme and the dissertation topic. A component of SDE is a discussion on issues linked with the dissertation.
2. SDE is held before an SDE examination board. Members are nominated by the president of ORO after an ORO meeting, and are then appointed by the dean, including the president of the examination board. The board, including members who may be appointed by the Ministry for the doctoral study programme, and has a minimum of seven members. The supervisor and the specialist supervisor are not members of the board. At least two members of the examination board must not be employees of CTU. The examination board for a given branch of study may be permanent, or it may be assembled on an ad hoc basis.
3. Members of the SDE examination board are professors, associate professors and distinguished professionals. Professionals who are not professors or associate professors are approved as potential board members by the relevant scientific council. The president of the board must be a professor or an associate professor.
4. The convening of the SDE must be publicly announced not less than two weeks in advance on the notice board of the faculty.
5. The doctoral student submits a written application for an SDE, using the prescribed form provided by the department of science and research. Successful completion of the study block is a condition for submitting the application. The application includes a list of the doctoral student’s publications (projects), including any

   responses to them. The supervisor and the head of the training unit make comments on the application, and the president of ORO approves the SDE. The date for the SDE is set by the Dean, after consultation with the president of the examination board.
6. The course of the SDE and the declaration of the results are open to the public. The evaluation of the doctoral student’s performance in the SDE is held in private. The final overall result of the SDE is evaluated by the following assessment grades "pass with distinction", "pass" or "fail".

7. During the private part of the evaluation, the SDE examination board takes a decision in the form of a vote in the presence of at least two-thirds of its members. Initially, the examiners vote either "pass" or "fail". The result is assessed as "pass" if the majority of the members present voted for this option, otherwise the result is assessed as "fail". If the result is assessed as "fail", the board agrees on a statement that justifies their decision. If the result is "pass", the examiners vote further to decide between "pass with distinction" and "pass". The result is assessed as "passed with distinction" if the majority of the members present voted for this option, otherwise the result is assessed as "pass".
8. If the outcome of the evaluation of the SDE examiners is "fail", the doctoral student may repeat the SDE one more time, but not earlier than three months from the date of the unsuccessful examination. In the event of a repeated SDE being assessed as "fail", the student's studies are terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34 para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act. In the event of a repeated examination, the result cannot be assessed as "passed with distinction".
9. The course of the SDE and its conclusions are documented in a report signed by the president of the board of examiners for the SDE, and the voting process is documented by a protocol signed by the president of the board and all its members who are present. After successful completion of the SDE, the department of science and research issues a document which verifies that the doctoral student successfully passed the SDE.

Article 30

Assessment, Presentation and Defence of the Dissertation

1. After passing the SDE, in order to initiate proceedings for the presentation and defence of her/his dissertation, the doctoral student submits a written request for permission (on the prescribed form), the dissertation in four copies and in electronic form in PDF format, a CV, the supervisor's report on the student, and a list of the doctoral student’s publications (projects), including any responses, divided into work on the dissertation topic and other work.
2. The department of science and research formally assesses the materials listed in para. 1. If the formal requirements are met, the department accepts the documents and confirms for the doctoral student on a copy of the request that the doctoral dissertation has been submitted. The materials are forwarded to the president of ORO. The dean appoints the board for the presentation and defence of the dissertation and the external examiners within 30 days on the basis of the submitted materials.
3. The board for the presentation and defence of the dissertation is appointed by the same rules as for the examination board for SDE under art. 29 paras. 2 and 3. The external examiners are also board members with voting rights. The number of Board members, not including the external examiners, must be at least 7. The supervisor is present during the proceedings of the Board, including the closed part.
4. The dissertation is opposed by at least two external examiners who, are appointed by the dean on the proposal of the head of the training unit or the supervisor and after approval by ORO. External examiners can only be prominent experts in the relevant discipline. At least one of them must be a professor, an associate professor or a Doctor of Science (Dr.Sc., or a foreign equivalent), and only one can be an employee of CTU. At least two of the external examiners are holders of a Ph.D., CSc. or equivalent degree; this rule does not apply to artistic disciplines.
5. The external examiners' report should be prepared within thirty days after submission of the dissertation. If an external examiner is not able to prepare the report, she/he will provide notification about this fact within 15 days. If an external examiner declines to provide a report, or if the department of science and research does not receive the report within 45 days, the dean may, on the proposal of the president of ORO, appoint a new external examiner.
6. The president of the board for the presentation and defence of the dissertation presents the external examiner's report on the dissertation to the doctoral student and his supervisor. If the evaluation of one of the external examiners points to serious imperfections, or if dissertation is not recommended for presentation and defence, the doctoral student may request that the dissertation be returned for revision, and the proceedings of the presentation and defence of the dissertation are interrupted. If the doctoral student does not use the revision option, the proceedings will continue. In cases when two of the reports are negative, revision of the dissertation is compulsory. A dissertation can be revised only once. In the event that the revised dissertation also receives a negative evaluation, proceedings for the presentation and defence go ahead.
7. The president of the board sets the date for the presentation and defence of the dissertation, in such a manner that the date is known within 30 days after receipt of the last report, unless the proceedings are interrupted. The doctoral student, the supervisor, the external examiners and the members of the board are notified about this date.
8. The date for the presentation and defence of the dissertation is published on the official notice board of the faculty, at least 3 weeks in advance. During this period, everyone can inspect the dissertation and everyone is allowed to take notes and make copies or reproductions at her/his own expense. Their remarks may be submitted in writing to the president of the board for the dissertation, or they may present them orally during the presentation and defence of the dissertation. The applicant is required to deliver an opinion on these remarks.

9. The absence of not more than one of the external examiners during the defense is permissible if the report was positive and members of the Board for the presentation and defence of the dissertation who are present accept the examiner's explanation for his absence. The report of the absent external examiner is read during the presentation and defence of the dissertation. The supervisor can be absent during the presentation and defence of the dissertation, if the doctoral student gives her/his consent.

10. The presentation and defence of the dissertation, including promulgation of the results, is open to the public, while the evaluation of the results of the presentation and defence of the dissertation is conducted in private. The closed part of the meeting is also attended by the supervisor. The outcome is announced by the president of the board for the presentation and defence of the dissertation immediately after the board reaches its decision.

11. The board for the presentation and defence of the dissertation decides on the outcome of the presentation and defence of the dissertation by a secret vote with at least two-thirds of its members present. The overall evaluation is "defended" or "not defended". The evaluation "defended" requires a majority vote of all members who are present, otherwise the result is "not defended". In the event of a negative outcome of the vote, the board agrees on a statement justifying the decision.

12. The course of the presentation and defence of the dissertation, and the conclusions, are documented in a report signed by the president of the board for the presentation and defence of the dissertation; the voting process is documented in the protocol signed by the president of the board and all its members who are present. The reports are filed in the department of science and research.

13. A doctoral student may repeat a failed dissertation defense, but only once and after it has been revised, and not less than six months after the original defence. If the second presentation and defence of the dissertation is unsuccessful, the studies are terminated in accordance with sec. 56 para. 1 point b) of the Act and art. 34, para. 7 point b). The decision-making process in this matter is governed by sec. 68 of the Act.

Article 31

Recognition of Previous Examinations in a Doctoral Study Programme

1. At the request of the doctoral student, the dean may recognize examinations duly completed in a doctoral study programme that was undertaken before registering for the current doctoral study programme. Such an examination is considered to have been passed on the day on which it was recognized.

2. It is not possible to recognize an entire block of study or a state doctoral examination.

3. A doctoral student may request recognition of an examination within five years from the date of the examination. Later requests cannot be granted.

4. The supervisor and ORO will express their opinions on the request.

5. The dean will decide the outcome of the application for recognition of the examinations within 30 days.

Part Five

COMMON PROVISIONS

Article 32

Study Documentation

1. Evidential documentation about participation in a study programme and completion of the study programme are governed by sec. 57 of the Act.

2. CTU issues a student ID card as proof of study in a study programme, in accordance with sec. 57 para. 1 point a) of the Act. The student ID card is used to identify the student. The student card is issued in the form of:

   a) a CTU student ID card, or

   b) a combined CTU student ID card and ISIC international student identification card.

3. The student card is issued by the Computing and Information Centre, CTU. Materials for issuing a student ID card are acquired from the register of students. Particulars of the ID card and the conditions for its issuance are set by the director of the Computing and Information Centre, CTU.

4. A student ID card is not transferable. A student is required to report without delay any loss, damage or destruction of a student ID card. After graduation, the former student is required to return the ID card to CTU without delay.

Article 33

Register of Students

1. CTU keeps and manages a register of students in accordance with sec. 88 of the Act. The register of students serves as a record of students and for budgetary and statistical purposes.
2. The student register contains data on individual students prescribed by law and by the Ministry.
3. The student register forms a part of the CTU information system. It is operatively led by study departments and departments of the SR. Entries in the register of students and study documentation can only be made by specially authorized employees of CTU.
4. The student register is collectively managed by the Computing and Information Centre of CTU. The documentation for managing the register is forwarded by the study departments and departments of science and research in the prescribed structure and according to an agreed timetable, while records of enrollment in studies, about the study programme, the branch of study, the form of study, interruption and termination of studies are made immediately after a decisive event.
5. The student register and documents on decisive events are archived. There are special regulations governing archiving and making printouts and copies.

Article 34

Completion of Studies

1. Bachelor and master's study programmes are completed by completing a study programme, i.e. due completion of all courses in a relevant programme, fulfillment of other requirements that a student must meet during the study programme, and passing the final state examination. The day of graduation is the day of the final state examination or the last part of the final state examination.
2. Studies in a doctoral study programme are completed by graduating from a study programme, i.e. duly fulfilling all requirements set by the Individual Study Plan, passing the state doctoral examination and the presentation and defence of the dissertation. The day of graduation is the day of the presentation and defence of the dissertation.
3. On the basis of due completion of her/his studies, the graduate is awarded a university diploma and a Czech-English supplement to the diploma. During the graduation ceremony, the University diploma with the Czech and English supplement is usually handed to the graduate, and the graduates take a graduation oath (Annex 5 of CTU Statute). If a graduate does not attend the graduation ceremony, the diploma can be handed over to her/him by a person authorized by the dean in return for signing a document stating that she/he has received the dipoma and signing the graduation oath (Annex 5 of CTU Statute). If for serious reasons the graduate is also unable to receive the diploma in this way, it can be received by person with a written and signed power of attorney.
4. Graduates of bachelor degree programmes are awarded the academic title Bachelor (abbreviated to "Bc.", written before the name); graduates of artistic programmes are awarded the academic title of Bachelor of Arts (abbreviated as "BcA.", written before the name).
5. Graduates of master's study programmes are awarded the academic title "engineer" in the field of technical sciences and technology (abbreviated as "Ing.", before the name); in the field of architecture the academic title "Engineer of Architecture" (abbreviated to "Ing. Arch.", written before the name), and in the field of arts the academic title "Master of Arts "(abbreviated as" MgA.", written before the name).
6. Graduates of doctoral study programmes are awarded the academic title "Doctor" (abbreviated to "Ph.D.", written after the name).
7. Studies are further terminated in event of:

   a) withdrawal from the study programme,

   b) failure to meet the requirements of a study programme in accordance with the study and examination regulations,

   c) withdrawal of accreditation from the study programme,

   d) cessation of accreditation for the study programme in accordance with sec. 80 para. 4 of the Act,

   e) expulsion from studies in accordance with sec. 65 para. 1 point c) or sec. 67 of the Act.

   f) In the cases referred to in points c) and d), CTU is obliged to provide the student with an opportunity to continue her/his studies in the same study programme or in a similar study programme at CTU or at another university.

8. A graduate or a former student whose studies ended in accordance with para. 7 will receive on request a certificate of completed exams or a certificate of studies and the award of an academic title/degree issued by the corresponding faculty.

9. Studies are also terminated:

   a) in accordance with para. 7 point a), on the day on which the faculty where the student is enrolled received her/his written statement of withdrawal from her/his studies,

   b) in accordance with para. 7 point b), on the day on which the decision to terminate her/his studies comes into effect,

   c) in accordance with para. 7 point c), on the day on which the deadline laid down in the decision of the Ministry expires,

   d) in accordance with para. 7 point d), on the day on which CTU announced the closure of the study programme or the date of expiry of the period for which accreditation was granted,

   e) in accordance with para. 7 point e), on the day on which the decision on expulsion came into effect.

10. A former student who has terminated her/his studies in accordance with paras. 1, 2 and 7, is obliged to surrender her/his student ID card without delay, and to submit proof that she/he has settled all claims toward CTU, including payment of fees.

Article 35

Publication of Graduation Theses

1. In accordance with sec. 47b of the Act, CTU publishes bachelor, master's and dissertation theses on a non-profit basis (hereinafter "thesis"), including the reports of the supervisor and the external examiners, and a record of the course and the outcome of the presentation and defence, through an institutional repository (hereinafter referred to as the "digital library of CTU") of academic graduation theses. The repository is centrally managed by CTU.

2. Original versions of theses are published after the presentation and defence by individual faculties. The conditions for publication, including the locations for access are determined by the dean of the faculty, and are available on the website of the relevant faculty.

3. The graduation thesis handed in by an applicant for presentation and defence must also be published at least five working days before the presentation and defence is held, along with the reports of the supervisor and the external examiners for public inspection at the CTU workplace where the presentation and defence of the thesis will be held, or through the digital library of CTU. Everyone is allowed to make transcripts or copies at her/his own expense.

4. It is obligatory for the author of the thesis to insert the electronic version of his work into the electronic information system of CTU within the set deadline. The dean may determine the final adjustments for the electronic version of thesis, if the thesis has a specific form (design, model, etc.). By submitting the thesis, the author agrees to the publication of her/his work in accordance with the Act, regardless of the outcome of the presentation and defence.

5. The authors of reports on the theses insert them personally or through a person authorized by the head of department within the set deadlines into the electronic information system of CTU. By submitting the report, the authors agree to its publication.

Article 36

Alternative Delivery and Review of Decisions

1. Alternative delivery of decisions in accordance with sec 68 para. 3 points a) through f) is carried out by publishing them. A list of addressees of decisions returned by mail to the faculty or to CTU will be posted immediately for a period of 15 days on the official notice board of the faculty or of CTU. The date of delivery is the eighth day after posting..

2. Students may apply to the rector or, if the decision was made by the dean, to the rector via the dean, for a review of a decision issued in accordance with sec. 68 para. 3 of the Act.

3. The student makes a request for a review of the decision in writing and not later than 30 days after it was received.

4. A request for a review of a decision must contain the student's full name, her/his mailing address, the name of the study programme and the branch of study, and the faculty where the programme is registered. It will also state the reasons for the request or for disagreeing with the decision, the alleged facts and the student's signature.

5. The rector's decision on the review is final, and is issued within 30 days of receiving the request for the review. The decision is made in writing and includes the following:

a) the decision,

b) the justification,

c) a warning that the decision is final, and that a request for a review is not admissible,

d) information about the authority that issued the decision,

e) the date of the decision,

f) the reference number under which the decision is recorded at CTU,

g) the official CTU stamp,

h) the signature of the rector or his authorized representative.

Part Six

AMENDING AND FINAL PROVISIONS

Article 37

Amending Provisions

1. Examinations held in the second resits before the effective date of these regulations are not included in the final number of resits referred to in art. 10, para. 4.
2. Students enrolled in studies before the effective date of these regulations will have their completion of study evaluated as "with distiction" using the criteria set out in art. 23, para. 2 of the regulations valid until 30. 9. 2015, unless it would be to their own advantage to use the criteria in art. 18 para. 2 of these regulations.
3. If the faculty has a directive specifying the rules for doctoral studies, it will adjust the directive to comply with these regulations no later than on January 1st, 2016.

Article 38

Final provisions

1. The Study and Examination Regulations for Students of the Czech Technical University in Prague registered by the Ministry on April 7th, 2009 under no. 7858 / 2009-30, as revised and amended, shall be repealed on 30 September 2015.
2. These regulations were approved in accordance with sec. 9 para. 1 point b) of the Act by the Academic Senate of CTU on May 27th, 2015.
3. This order shall come into effect in accordance with sec. 36 para. 4 of the Act on the date of registration by the Ministry.
4. These regulations come into effect on October 1st, 2015.

prof. Ing. Petr Konvalinka, CSc., v. r.

rector

Art. 23 para. 2 of the Regulations in force until 30. 9. 2015 reads: A graduate will have his entire studies evaluated as "passed with distinction" if she/he or has achieved a total weighted point average of not more than 1.50, has received no more than one E grade assessment during her/his studies, and if the state final examination was evaluated with an A grade.