Study plan

Name of study plan: Prospectus - bakalá ský

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Biomedical Technology Type of study: Bachelor full-time Required credits: 0 Elective courses credits: 0 Sum of credits in the plan: 0 Note on the plan:

Name of the block: pomocná Minimal number of credits of the block: 0 The role of the block: !

Code of the group: PRO-B-2 Name of the group: Courses that will be open if at least five students are registered Requirement credits in the group: Requirement courses in the group: Credits in the group: 0 Note on the group: Name of the course / Name of the group of courses

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role	
17AVAUBME	Introduction to Biomedical Engineering Ji í Hozman, Evgeniia Karnoub Ji í Hozman Ji í Hozman (Gar.)	Z	2	1P+1C	Z	!	

Characteristics of the courses of this group of Study Plan: Code=PRO-B-2 Name=Courses that will be open if at least five students are registered

 17AVAUBME
 Introduction to Biomedical Engineering
 Z
 2

 The main goal of the course is to implement an introduction to the field of study, including the relationship between the content of biomedical engineering, the study plan, the requirements of Czech legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional practice, as well as the possibilities of other professional activities of students. The course also includes a description of the disciplines of biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (profession) in health care will be described in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned.

Code of the group: PRO-B-0

Name of the group: Courses that will certainly be open

Requirement credits in the group:

Requirement courses in the group:

Credits in the group: 0

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7ABBALP	Algorithmic and Programming Theory Lenka Hanáková, Pavel Smr ka, Tomáš Veselý, Christiane Malá Pavel Smr ka Pavel Smr ka (Gar.)	KZ	4	2P+2C	z	ļ
F7ABBAF1	Anatomy and Physiology I. Anastasiya Lahutsina, Ksenia Sedova Ksenia Sedova (Gar.)	Z,ZK	4	2P+1C+1L	. Z	!
F7ABBAF2	Anatomy and Physiology II. Anastasiya Lahutsina, Ksenia Sedova, Anastasia Sedova Anastasiya Lahutsina Ksenia Sedova (Gar.)	Z,ZK	4	2P+1C+1L	L L	!

F7ABBA3A	English Language IIIA (part 1) Eva Moty ková Eva Moty ková Eva Moty ková (Gar.)	KZ	2	2C	Z	!
F7ABBA3B	Eva Moty kova Lva Moty kova Lva Moty kova (Gar.) English Language IIIB (part 2) Eva Moty ková Eva Moty ková (Gar.)	KZ	2	2C	L	!
F7ABOBP	Bachelor Thesis	Z	10	4XT	L	!
F7ABOBV	Binocular Vision P emysl Ku era, Ond ej Policar P emysl Ku era Markéta Žáková (Gar.)	Z,ZK	7	2P+4C	Z	!
F7ABBBCH	Biochemistry Martina Turchichová, Anna Ludvíková Martina Turchichová Martina Turchichová (Gar.)	Z,ZK	2	1P+1L	Z	!
F7ABBBFT	Biophotonics Jan Mikšovský, Jan Remsa Jan Remsa Jan Mikšovský (Gar.)	KZ	2	2P	Z	!
F7ABBBLS	Biological Signals Václava Piorecká, Marek Piorecký Václava Piorecká Václava Piorecká (Gar.)	Z,ZK	4	2P+2L	L	!
F7ABBBLG	Biology Veronika Vym talová Veronika Vym talová Veronika Vym talová (Gar.)	Z,ZK	4	2P+2L	Z	!
F7ABBBB	Biomechanics and Biomaterials Matej Daniel, Petr Volf Petr Volf Matej Daniel (Gar.)	Z,ZK	4	2P+2L	Z	!
F7ABBCHM	Chemistry Iveta Horá ková, Libor Holík Iveta Horá ková	Z,ZK	4	2P+1C+1L	L	!
F7ABOKC1	Contact Lenses I.	Z,ZK	3	2P+2C	L	!
F7ABOKC2	Contact Lenses II. Ji í Michálek, Libor Eichenmann, Iva Klimešová Ji í Michálek Ji í Michálek (Gar.)	Z,ZK	5	2P+2C	Z	!
F7ABOKRV	Correction of Refractive Errors	ZK	1	1P	L	!
17AVACC	Czech for Foreigners Eva Moty ková, Hana Rogalewiczová, Vladimír Rogalewicz Eva Moty ková Eva Moty ková (Gar.)	KZ	3	4C	Z,L	!
F7ABBEM	Electrical Measurements Jan Vrba, Roman Mat jka Jan Vrba Jan Vrba (Gar.)	Z,ZK	4	2P+2C	Z	!
F7ABBELF	Electrophysiology Ksenia Sedova, Anastasia Sedova Anastasia Sedova Ksenia Sedova (Gar.)	Z,ZK	2	1P+1L	Z	!
F7ABBEMP	Electromagnetic Fields of Living Organisms Jan Vrba, Ond ej Fišer Ond ej Fišer Jan Vrba (Gar.)	KZ	2	1P+1L	L	!
F7ABBEO	Electronic Circuits Ond ej Fišer, Pavel Máša, Tomáš Díž al Ond ej Fišer Pavel Máša (Gar.)	Z,ZK	4	2P+2C	Z	!
F7ABBEBI	Ethics in Biomedical Engineering Václav Navrátil Václav Navrátil Martina Dingová Šliková (Gar.)	ZK	2	2P	L	!
F7ABBESP	Management of Health Care Technology Ji í Hozman Ji í Hozman Ji í Hozman (Gar.)	Z,ZK	2	1P+1C	L	!
F7ABOZFO	Foundations of Physiological Optics	ZK	2	2P	L	!
F7ABBFVP	Multivariable Calculus Petr Maršálek Petr Maršálek (Gar.)	KZ	2	1P+1C	Z	!
F7ABBFY1	Physics I. Jan Mikšovský, Petr Písa ík Petr Písa ík Jan Mikšovský (Gar.)	Z,ZK	4	2P+1C+1L	Z	!
F7ABBFY2	Physics II. Jan Mikšovský Petr Písa ík Jan Mikšovský (Gar.)	Z,ZK	6	2P+2C+2L	L	!
F7ABBFCH	Physical Chemistry Libor Holík, Karel Roubík Karel Roubík (Gar.)	Z,ZK	4	2P+1C+1L	Z	!
F7ABOOGB	Geometric and Opthalmic Optics	Z,ZK	5	3P+2C	L	!
F7ABBHE	Hygiene and Epidemiology Anastasia Sedova Anastasia Sedova Emil Pavlík (Gar.)	ZK	1	1P	L	!
F7ABBISZ	Information Systems in Health Care Zoltán Szabó, David Jirsa Zoltán Szabó Zoltán Szabó (Gar.)	Z,ZK	4	2P+2C	Z	!
F7ABBITP	Integral Calculus Ji í Neustupa, Tomáš Parkman, Lukáš Liebzeit Tomáš Parkman Tomáš Parkman (Gar.)	Z,ZK	4	2P+2C	L	!
F7ABBKT	Communication Technology Christiane Malá, Martin Vít zník, Karel Hána, Jan Mužík, Tomáš Funda Karel Hána Karel Hána (Gar.)	Z,ZK	2	1P+1C	Z	!
F7ABBKZS	Conventional Imaging Systems Ji í Hozman, Tomáš D íž al, Martin Rožánek, Martin apek Ji í Hozman Ji í Hozman (Gar.)	Z,ZK	4	2P+1C+1L	L	!
F7ABBLT	Clinical Laboratory Instrumentation Martina Turchichová Martina Turchichová (Gar.)	Z,ZK	4	2P+2L	L	!
F7ABBLPZ1	Medical Devices and Equipment I. (Diagnostic Devices) Karel Roubík, Martin Rožánek, Petr Kudrna Petr Kudrna Martin Rožánek (Gar.)	Z,ZK	4	2P+2L	Z	!
F7ABBLPZ2	Medical Devices and Equipment II. (Therapeutical Devices) Petr Kudrna, Václav Ort, Ladislav Bís Petr Kudrna Petr Kudrna (Gar.)	Z,ZK	2	1P+1L	L	!
F7ABBLAD	Linear Algebra and Differential Calculus Petr Maršálek, Ji í Neustupa, Tomáš Parkman Ji í Neustupa (Gar.)	Z,ZK	6	2P+4C	Z	!
F7ABBMAZ	Management and Admininistration in Health Care Václav Navrátil Václav Navrátil (Gar.)	KZ	1	1P	Z	!

F7ABBMAT	Marketing of Medical Technology Petra Hospodková Petra Hospodková (Gar.)	KZ	2	2P	L	!
F7ABBMEC	Mechanics Matej Daniel, Tomáš Goldmann Matej Daniel Matej Daniel (Gar.)	Z,ZK	4	2P+2L	L	!
F7ABBMT	Mater Daniel, Tolhas Goldmann Mater Daniel (Gal.) Medical Terminology Václav Navrátil Václav Navrátil (Gar.)	Z	1	1C	Z	!
F7ABBMVP	Research Methodology Marek Novák, Jakub Ráfl Jakub Ráfl Jakub Ráfl (Gar.)	KZ	2	1P+1C	Z	!
F7ABBMTB	Microprocessors in Biomedicine Lenka Hanáková, Pavel Smr ka, Karel Hána, Jan Broulím Karel Hána Pavel Smr ka (Gar.)	KZ	2	1P+1L	Z	!
F7ABBMDT	Microwave Diagnostics and Therapy Jan Vrba, David Vrba Jan Vrba Jan Vrba (Gar.)	KZ	2	1P+1L	L	!
F7ABBMS	Modelling and Simulation Václav Petrák Václav Petrák Václav Petrák (Gar.)	Z,ZK	4	2P+2C	L	!
F7ABBMFJ	Physical Phenomena Modeling in COMSOL MULTIPHYSICS Jan Vrba, David Vrba David Vrba David Vrba (Gar.)	KZ	2	1P+1C	Z	!
F7ABBNMP	Project Proposal and Management Václav Bláha Václav Bláha Václav Bláha (Gar.)	KZ	2	1P+1C	L	!
F7ABBOIZ	Protection Against Ionizing Radiation Tomáš Veselský Tomáš Veselský Jana Hudzietzová (Gar.)	ZK	2	2P	L	!
F7ABOPO	OPT Project Markéta Žáková	KZ	5	4C	Z,L	!
F7ABOOFP	Opthalmology Instruments	ZK	3	3P	Z	!
F7ABBPPS	Patient and Device Simulators and Testers Martin Rožánek, Petr Kudrna, Lenka Horáková Petr Kudrna Petr Kudrna (Gar.)	Z,ZK	2	1P+1L	Z	!
F7ABBPPP	Programming Tools Christiane Malá, Martin Vít zník Christiane Malá	KZ	2	2C	L	!
F7ABBPPM1	Programming in Matlab I. Christiane Malá Radim Krupi ka Christiane Malá (Gar.)	KZ	1	1C	Z	!
F7ABBPPM2	Programming in Matlab II. Christiane Malá Radim Krupi ka Radim Krupi ka (Gar.)	KZ	2	2C	L	!
F7ABBPNK	Design and Construction of Medical Devices/Practical Exercises Roman Mat jka, Jana Mat jková Jana Mat jková Roman Mat jka (Gar.)	KZ	4	4L	Z	1
F7ABBPTI	Principles and Practice in Tissue Engineering Roman Mat jka Roman Mat jka Roman Mat jka (Gar.)	KZ	2	0P+2C	L	!
F7ABBPMS	Probability and Mathematical Statistics Marek Piorecký, Jan Štrobl, Michaela Mrázková, Filip erný Michaela Mrázková Marek Piorecký (Gar.)	Z,ZK	4	2P+2C	Z	!
F7ABBPP	First Aid Martin Stan k Martin Stan k Martin Stan k (Gar.)	KZ	2	1P+1C	L	!
F7ABBPSL	Psychology Olga Shivairová Olga Shivairová Olga Shivairová (Gar.)	KZ	2	1P+1C	Z	!
F7ABBSPR1	Semestral Project I. Petr Kudrna Petr Kudrna Petr Kudrna (Gar.)	KZ	1	1C	L	!
F7ABBSPR2	Semestral Project II. Petr Kudrna Petr Kudrna Petr Kudrna (Gar.)	KZ	4	4C	Z	!
F7ABBSM	Sensors in Medicine Tomáš Pokorný, David Vrba, Jan Rédr David Vrba David Vrba (Gar.)	Z,ZK	4	2P+2L	L	!
F7ABBSEL	Power Engineering Ji f Hozman, Ond ej Fišer, Marek Novák, David Vrba David Vrba David Vrba (Gar.)	Z,ZK	5	2P+3L	L	!
F7ABBSJ	Scripting Languages Tomáš Kraj a Radim Krupi ka Radim Krupi ka (Gar.)	KZ	2	2C	L	!
F7ABBSPT	Equipment for Anaesthesiology and Resuscitation Karel Roubík, Václav Ort, Jakub Ráfl, Simon Walzel Jakub Ráfl Václav Ort (Gar.)	Z,ZK	4	2P+2L	L	!
F7ABOSUR1	Subjective Refraction I. P emysl Ku era, Markéta Žáková Markéta Žáková Markéta Žáková (Gar.)	Z,ZK	4	2P+2C	Z	!
F7ABOSUR2	Subjective Refraction II.	Z,ZK	4	2P+4C	L	!
F7ABBTEL	Theory of Electrical Engineering Pavel Máša, Tomáš D íž al, Marek Novák Tomáš D íž al Pavel Máša (Gar.)	Z,ZK	4	2P+2C	L	!
F7ABBTZS	Tomographical Imaging Systems Ji í Hozman, Evgenila Karnoub, Tomáš D íž al, Martin Rožánek Martin Rožánek Ji í Hozman (Gar.)	Z,ZK	4	2P+1C+1L	Z	!
F7ABBUSS	Introduction to Signals and Systems Jan Kauler Jan Kauler (Gar.)	Z,ZK	4	2P+2C	Z	!
17AVARP1	Research Project I. Ji í Hozman, Evgenila Karnoub, Petr Kudrna, Hana D cká Petr Kudrna Petr Kudrna (Gar.)	KZ	10	8D+2S	L,Z	!
17AVARP2	Research Project II. Ji í Hozman, Evgenila Karnoub, Petr Kudrna, Hana D cká Petr Kudrna Petr Kudrna (Gar.)	KZ	10	8D+2S	L,Z	!

17AVARP3	Research Project III. Ji í Hozman, Evgeniia Karnoub, Petr Kudrna, Hana D cká, Martin Otáhal Petr Kudrna Petr Kudrna (Gar.)	KZ	10	8D+2S	L,Z	!	
F7ABBZP	Fundamentals of Pathology Richard Becke Richard Becke Richard Becke (Gar.)	ZK	2	2P	L	!	
F7ABBZLN	Legislation in Health Care and Technical Standards Vojt ch Kamenský, Peter Kneppo Vojt ch Kamenský Peter Kneppo (Gar.)	KZ	2	1P+1C	Z	!	
F7ABBZOD	Image Data Processing Zoltán Szabó Zoltán Szabó Zoltán Szabó (Gar.)	KZ	2	1P+1C	Z	!	
Characteristics of the courses of this group of Study Plan: Code=PRO-B-0 Name=Courses that will certainly be open							
F7ABBALP Alg	porithmic and Programming Theory				KZ	4	
Algorithm, data structures. Id	lentifiers, data types. assignment statement, conditional statement, cycles. Arithmetical a	nd logical operati	ons. Digital	representati	on of numbe	ers, numeration	
systems. Introduction to stru	ctured programming in C language - building and structure of simple programs, creating	g of the user fund	tions, user	input and ou	utput, file ma	anagement,	
memory management. Pract	tical overview of programming techniques and basic algorithms in C language. Recursive	e and iterative me	ethods, mea	asuring algor	ithm quality.	Abstract data-	
types, data sorting and sear	ching, implementation of basic numerical algorithms. Introduction to biomedical data pro	ocessing - progra	mmers view	w. Introductio	on to softwar	e engineering.	
F7ABBAF1 An	atomy and Physiology I.			Z	,ZK	4	
Anatomy and physiology I co	overs functional aspects of particular organs and their systems.			1			
F7ABBAF2 An	atomy and Physiology II.			Z	,ZK	4	
Anatomy and physiology II li	nks to Anatomy and Physiology I. The subject covers functional aspects of particular or	gans and their sy	vstems.				
	glish Language IIIA (part 1)				KZ	2	
	ncrease students' language competence in academic English and professional vocabul						
able to work actively with ac	ademic text, understand and be able to use basic terminology and be aware of the diffe	erent stylistic leve	ls of Englis	h and the as	sociated syr	ntactic and	
lexical devices.							
F7ABBA3B En	glish Language IIIB (part 2)				KZ	2	
Teaching activities in the sur	nmer semester are project-based.			•	•		
F7ABOBP Ba	chelor Thesis				Z	10	
Work of the student under th	ne guidance of the supervisor and possible consultant on the assigned BP topic, using k	knowledge and sk	cills from pro	evious cours	es and in th	e allotted time.	
Outcome knowledge, skills,	abilities and competences: The student is able to work on the assigned topic in a define	ed format, in a de	fined time a	and is able to	work unde	r the guidance	
of the BP supervisor and als	to in a team. The student is able to use knowledge, skills and knowledge from previous	courses to solve	the assigne	ed problem.	This is a Bad	chelor's thesis,	
which is defended in front of	the HSS committee. This thesis is assessed by the supervisor and the opponent accor	ding to the ECTS	6 grading so	ale. Subseq	uently, these	e evaluations	
and the result of the state fin	nal examination in the subject areas are included in one final evaluation.						
F7ABOBV Bir	nocular Vision			Z	,ZK	7	
This course builds on course	s dealing with refraction of the eye and visual functions. Topics include: theory of binocula	ar vision and cond	litions of its	origin, devel	opment of v	isual functions,	
disorders of binocular vision	, practical examination of binocular vision, heterophoria and fixation disparity, relationsh	nip of accommoda	ation and ve	ergence, verg	gence disord	ders and visual	
training.							
F7ABBBCH Bio	ochemistry			Z	,ZK	2	
	ntroduced to the basics of Biochemistry. The course builds on the knowledge gained in	-	-		-	-	
	retation goes through the basic building structures of biological systems (amino acids, p		-	-			
	genetics to the most important metabolic processes. Particular attention is paid to the as	, ,		0			
	pratory, which are part of the follow-up chemical discipline. The laboratories are focused o	•	•				
	etermination of biomolecules and the verification of their properties. Students should be	come familiar wit	n the basic		· · ·		
	ophotonics				KZ	2	
	applications in the interdisciplinary sphere, connecting physics, optics and biology. Intera						
	piology, bioimaging, basics of lasers, laser safety, optical biosensors, photodynamical thera	apy, optical manip	ulation with	cells, nanou	echnology ic	or biophotonics,	
biomaterials for photonics.					71/	4	
	blogical Signals	principles of good	rotion roo		.,ZK │	4	
	is and description of the most important electric and non-electric biological signals. The d signals involve native and evoked biosignals, including biological signals of the heart,			-			
°	tinal system etc. Advanced methods of digital biosignal processing, spectrum analysis, mo						
° °	ntation of results. Adaptive segmentation, artificial neural networks for signal processing.			elligence, lec	iluies exilac	autornatic	
	Dlogy			7	,ZK	4	
	cellular level of organisms - from acelullar through prokaryotic to eukaryotic. The viruse	s Prokarvotic cel	lls Bacteria				
	nimal cell structure and function. Structure and conformation of biopolymers (nucleid a						
	doplasmic reticulum, the Golgi apparatus, lysosomes, vacuoles. Semiautonomic organe		-	-			
-	f eukaryotes: endosymbiotic hypothesis. Ribosomes. The cytoskeleton: microtubules, m			-	-		
	ion of cell nucleus - amitosis, mitosis, phases of mitosis, the mitotic spindle; meiosis. The		-				
	modern genetics: structure, function and inheritance of genes. Includes the chemistry an						
	man genetics. Chromosomal aberrations, genetic disorders and diseases. Genetic engi					0,	
	omechanics and Biomaterials	-		7	,ZK	4	
	Il students who need to supplement their knowledge and have a general knowledge about	out biomechanics	and its ap			tical problems.	
The content is chosen to be	sufficient to understand athe issues in related subjects, especially the subject of Mecha	anics and Robotic	cs in Medici	ine. If the stu	ident does r	not choose the	
subject and has never had th	ne opportunity to complete these basic knowledge, they will be exposed to the risk of mi	sunderstanding t	he subsequ	ient issues ir	n related sub	ojects, in which	
this is not taken into account	t the basic knowledge.						
F7ABBCHM Ch	emistry			Z	,ZK	4	
	tegorization and properties of substances, chemical bonds, chemical reactions, elemer	nts in periodic tab	le, organic		· .	, natural	
	tical methods - instrumental analysis, chemical calculations, chemical equations						
F7ABOKC1 Co	ntact Lenses I.			Z	,ZK	3	
	elopment. Contact lens terminology. Manufacturing methods. Classification of contact le	enses and their m	aterials. Ma		· · ·	-	
-	lens wearing and replacement. Contact lens care: composition and principles of action					-	
	ation of contact lens practice. Patient history, basic examination and contact lens select					-	
lens insertion and removal.							

F7ABOKC2	Contact Lenses II.	Z,ZK	5
	ocal and multifocal lenses and other methods of presbyopia correction. Contact lenses for children. Coloured, cosmetic and pro	1 '	ses. Therapeutic
use of contact lenses.	Special types of contact lenses. Special uses of contact lenses (sports, demanding occupations and environments, patients v	with general diseas	ses, etc.). Drug
interactions with contact	t lenses. Complications of contact lenses and their solutions. Application of soft and rigid spherical lenses. Application of cor	ntact lenses in asti	gmatism and
presbyopia. Basic and	specific care of contact lenses. Inspection of patients with contact lenses.		
F7ABOKRV	Correction of Refractive Errors	ZK	1
Subject is focused on the	heory and practical examination of refractive errors and various possibilities of correction of refractive errors. Optical and surg	gical correction of	refractive errors.
Objective methods of re	fraction. Subjective methods of refraction. Correction of myopia. Correction of hypermetropia. Correction of astigmatism. Corre	ection of presbyopi	a. Determination
of binocular balance. B	asic techniques of surgical correction of refractive errors. Refractive surgery. Methods of laser keratorefractive surgery. Impla	ntation of intraocu	lar lenses.
17AVACC	Czech for Foreigners	KZ	3
Survival Czech			1
F7ABBEM	Electrical Measurements	Z,ZK	4
Measuring of electric va	, alues, principles, using, and parameters. Analogue measuring converters. Electromechanical measuring devices. Current and	d potential measur	ring. Frequency
and shift phase measur	ing. Electric work and electric power measuring: direct current, single-phase and three-phase current. Electrical resistance an	id impedance mea	suring. Magnetic
measuring. Analogue s	cope. Digitalization, digital signal processing, signal reconstruction. Electronic measuring devices: multimeter, digital scope. C	Optoelectronic me	asuring device.
F7ABBELF	Electrophysiology	Z,ZK	2
Aim/objectives: to introd	uce students to the theory of electrical phenomena at the cell, organ and organism level, to the possibilities of measuring ar	nd using these ma	nifestations. A
sub-objective is to enab	ble students to experimentally verify the knowledge. This course builds on Anatomy and Physiology I and II and requires a ba	sic knowledge of t	the structure
(anatomy) and function	(physiology) of the following systems (excitable tissues): nervous, musculoskeletal, circulatory (especially the heart). The co	urse deals with the	e problems of
excitable tissues (nervo	bus, The course deals with the physiology of nervous tissue, muscle and glandular tissue and provides knowledge of the physiology	siology of electrica	al processes at
different levels: cell, tiss	sue, organ, organism.		
F7ABBEMP	Electromagnetic Fields of Living Organisms	KZ	2
Static and quasi-static	electric and magnetic fields, electromagnetic fields. Electrical and magnetic properties of biological tissues. Electrical, magnet	tic and electromag	netic stimulation
in medicine. Anatomica	I and physiological bases of bioelectromagnetism. Bioelectric sources and conductive environment. Integral relations of elect	rodynamics of bio	electric fields,
electrodynamic aspects	s of mathematical modeling of electrocardiography and electroencephalography. Topographic concept of bioelectrical and bio	magnetic measure	ements. Methods
and techniques of mea	surement. Human-robotic limb replacement interface.		
F7ABBEO	Electronic Circuits	Z,ZK	4
The course provides a	basic orientation in the principles of electronic circuits used in electronic laboratory and medical devices. It provides a prereq	uisite for the skille	d operation of
analogue and digital ins	strumentation. technology. Course entry requirements: Successful completion of Theoretical Electrical Engineering. Exit Know	wledge, Skills, Abil	ities and
Competencies: Student	ts will become familiar with functional electronic blocks that are used in the design of laboratory and medical instruments. The	e course will prepa	are them to
competently assess the	e basic properties and parameters of electronic devices.		
F7ABBEBI	Ethics in Biomedical Engineering	ZK	2
An overview of basic etl	nical concepts and theories in the context of applied ethics with respect to the professional orientation, maintenance, and devel	opment of humanit	ties in technically
oriented students. Prere	equisites and co-requisites: Knowledge of humanities in the scope of secondary school studies (basics of philosophy, history,	psychology). Acqu	uired knowledge,
skills, abilities, and corr	npetencies: Knowledge of basic concepts and controversial topics in theoretical and applied ethics, the ability to critically thin	k, discuss, argue a	and defend their
own views in ethical dil	emma situations, developing the ability to work with literature, enhance empathy skills.		
F7ABBESP	Management of Health Care Technology	Z,ZK	2
F7ABOZFO	Foundations of Physiological Optics	ZK	2
Fundamentals of optica	a imaging. Physiological structure of human eye, its geometric and physical properties. Visual perception. Sensitivity of eye. C	Jptical system of h	uman eye. Axes
and pupils of eye. Schei	natic optical models of human eye. Photometric parameters of optical system of eye. Accommodation and aging of eye. Monoch	nromatic and chror	natic aberrations
of human eye. Resolvir	ng power and depth of field. Influence of aberrations on image quality. Contrast sensitivity. Ametropy. Astigmatism. Aphakia. A	mblyopy. Physiolog	gy of eye
movement, methods of	eye tracking. Basic principles of binocular and stereoscopic vision.		
F7ABBFVP	Multivariable Calculus	KZ	2
F7ABBFY1	Physics I.	Z,ZK	4
Course Physics 1 is use	d to repeat and expand the basic knowledge of physics in the field of classical mechanics, thermals and optics, which is need	1	ly at FBME CTU.
-	retical knowledge, the ability to solve numerical problems and practical skills associated with working in laboratories.		
F7ABBFY2	Physics II.	Z,ZK	6
The course Physics 2 for	Julious the course Physics 1 and expands the acquired knowledge in the field of electromagnetism and the basics of atomic a		-
matter physics.			
F7ABBFCH	Physical Chemistry	Z,ZK	4
	properties of substances. Basic calculations. Principles and behavior of systems of gases and liquids. Chemical bonds. Prop		1
-	ces. Phase equilibria, multiface systems. Behavior and properties of vapors, evaporation. Electrochemical potential, electrod		-
	ation electrodes, electrodes for EKG, EEG, EMG etc. Redox potential. Inert electrodes. Membranes - types, properties and a		
selective electrodes. Ac	cidity and basicity of solutions, pH. pH measurement. Stability of materials, corrosion. Passivation and self-passivation. Electro	olysis and conduc	tivity of solutions
and its measurements.	Polarography. Further methods of analysis of gases and solutions in BME (Biomedical Engineering.) Optical absorption. Spe	ctrophotometry. F	luorescence and
phosphorescence. Sen	sors for measuring of pH, pO2, pCO2, and SaO2 working on the basis of fibre optic cables and absorption or fluorescence. A	Advanced analytica	al devices. Mass
spectroscopy, nuclear r	nagnetic resonance, flame spectroscopy. Thermodynamics of reaction systems, basic calculations.		
F7ABOOGB	Geometric and Opthalmic Optics	Z,ZK	5
This course focuses on	basics of geometrical optics and its applications in the field of optical design of simple optical elements and systems (lenses	, mirrors, prisms, t	elescopes, etc.).
The second part of the	course deals with a description and analysis of a human eye as an optical imaging system. The design and analysis of vario	us types of specta	cle lenses for
correction of refraction	errors is presented.c		
F7ABBHE	Hygiene and Epidemiology	ZK	1
Students should learn t	heoretical basics of Epidemiology and Hygiene disciplines in depth covered by lecture topics. As result of this subject, studer	nt should be famili	ar with targets
and working methods u	sed in all disciplines of infectious and non-infectious epidemiology, environmental epidemiology and in solving of priorities ar	nd problems of Pu	blic Health
Protection. Outcoming	knowledge, skills, abilities and competences: Knowledge of basic methods used in preventive medical disciplines and legisla		
F7ABBISZ	Information Systems in Health Care	Z,ZK	4
Lectures are oriented of	n medical informatics definition and basic characteristic of the different specialized areas. The relations between IS and heal		financing and
controlling are analyzed	d as well. Some basic information technology, HW and SW tools are described in relation to IS design. A special attention is	paid to medical da	ta coding and
-	I communication standards. Different types and features of clinical and hospital IS, decision support systems and regional he	alth care IS are ar	nalyzed and
I discussed. Methodolog	v of IS development, implementation and support are presented as well.		

F7ABBITP Integral Calculus	Z,ZK	4
The subject is an introduction to integral calculus and integral transforms. Integral calculus: anti-derivative, indefinite integral, properties and meth and by substitution, partial fractions), definite integral, properties, Newton-Leibnitz fundamental theorem, simple applications of both indefinite and		
solving differential equations (ODEs) (1st order ODEs with separable variables, linear 1st order homogenous as well as non-homogenous ODEs		
non-homogenous ODEs with constant coefficients), intro to multiple integrals, particularly double integral and applications. Integral transforms: La		•
transform and their application for solving nth order linear ODEs with constant coefficients.		
F7ABBKT Communication Technology	Z,ZK	2
The aim of the course is to teach the student to understand the basic principles of the function of personal computers, their peripherals and comm		They will be able
to configure the network interface and configure and connect a peripheral type of a standard medical devices equipped with a wired or wireless		4
F7ABBKZS Conventional Imaging Systems Electromagnetic radiation spectrum and relationship to the modalities of medical diagnostic imaging systems. Fundamentals of imaging theory.	Z,ZK	4
properties of imaging systems. Optical imaging systems including microscopic. Television imaging systems (including video endoscopic imaging		
pre-processing methods. Infrared imaging systems (thermal imaging/IR imaging systems). X-ray imaging systems. Gamma imaging systems. Le		-
exercises provide students with an overview of the principles of image formation in medicine for conventional imaging systems and methods. The	ere are described me	thods for image
data sensing, digitization and subsequent processing and principles of function and properties of sensing image devices in context, which is espec	-	
point of view of the whole course and study specialization. Knowledge, skills and competences: The student is able to explain the basic physical knows its layout including the principle of image formation. The student is able to assess, on the basis of standard definition of technical parameters.		
physician requirements for selected modality. Such knowledge is a prerequisite to the correct process technology selection and application of the		
necessary to ensure the required quality of the resulting image data.		
F7ABBLT Clinical Laboratory Instrumentation	Z,ZK	4
Clinical laboratory instrumentation introduces principles of bioanalytical methods used in clinical diagnostics. Emphasis is put on optical method		-
spectroscopy, AAS, AES, fluorimetry), NMR and X-ray analysis, electrochemical and electromigration methods (ion electrodes, biosensors, elec		
imunoassays and genetic methods (ELISA, PCR) as well as on chromatography and mass spectrometry. Contribution of lab automation to clinic During the laboratory course students will be introduced into the basics of work in bioanalytical laboratory and lab data processing.	ai diagnostics will be	also discussed.
F7ABLPZ1 Medical Devices and Equipment I. (Diagnostic Devices)	Z,ZK	4
Medical devices categories. Electrical safety of medical devices. Biopotentials amplifiers. Electrocardiographs, electromyographs and electroence	1 '	1
blood flow and cardiac output measurement. Blood pressure measurement. Cardiac frequency measurement. Phonocardiography. Pulse oximetre	y. Medical monitors. E	ectrostimulation
and electrosurgery medical devices. Therapeutic medical devices. Implantable medical devices. Telemetry. Medical devices for audiology.		
F7ABBLPZ2 Medical Devices and Equipment II. (Therapeutical Devices)	Z,ZK	2
Medical devices categories. The electrical safety of therapeutical medical devices. Artificial ventilation, introduction. Conventional ventilation. High		•
membrane oxygenation. Hemodialysis. Drug infusion pumps (volumetric, syringe). Artificial cardiac pacemaker. Defibrillators (external, implantat units. Therapeutic ultrasound. Electro-therapy. Magneto-therapy.	bie). Cochiear impiant	. Electrosurgery
F7ABBLAD Linear Algebra and Differential Calculus	Z,ZK	6
The course is introduction to differential calculus and linear algebra. Differential calculus - sets of numbers, sequences of real numbers, real function		1
continuity and derivative of a function investigation of function behavior), Taylor's formula, real number series. Linear algebra - vector spaces, ma	atrices and determina	nts, systems of
linear algebraic equations (solvability and solution), eigenvalues and eigenvectors of matrices, applications.	1	
F7ABBMAZ Management and Admininistration in Health Care	KZ	1
		1
Getting to know the structure of the health sector and financing models Health. Zoom administrative management issues various types of medic interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces.	al workplaces, their n	ecessary
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces.		
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology	KZ	2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces.	KZ Are technology. Practi	2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care	KZ Are technology. Practi	2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and	KZ are technology. Practi e exercises. Z,ZK moment effect - deco	2 cal cases are 4 pmposition,
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined on the space - equation of equilibrium.	KZ are technology. Practi e exercises. Z,ZK moment effect - deco rmined systems - mot	2 cal cases are 4 omposition, tion restrictions,
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy	KZ are technology. Practi e exercises. Z,ZK moment effect - deco rmined systems - mot of rotational motion,	2 cal cases are 4 omposition, tion restrictions, product moment,
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined on the space - equation of equilibrium.	KZ are technology. Practi e exercises. Z,ZK moment effect - deco rmined systems - mot of rotational motion, ellipse of inertia. Inte	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia,	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrined systems - mot of rotational motion, ellipse of inertia. Inte ils - tests of mechanic	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties,
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of material	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrined systems - mot of rotational motion, ellipse of inertia. Inte ils - tests of mechanic sss-section design, th	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardred F7ABBMT	KZ are technology. Practic e exercises. Z,ZK moment effect - deco rmined systems - mot of rotational motion, ellipse of inertia. Inte ellipse of inertia. Inte ellipse of mechanic pss-section design, th ess, adhesion, tought Z	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous	KZ are technology. Practic e exercises. Z,ZK moment effect - deco rmined systems - mot of rotational motion, ellipse of inertia. Inte ellipse of inertia. Inte ellipse of mechanic pss-section design, th ess, adhesion, tought Z	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia - kinetic energy momentations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through the use of tests.	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Inte ils - tests of mechanic pass-section design, th iess, adhesion, toughin Z isly informed about te	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowledge check up through the use of tests. </td <td>KZ are technology. Practic e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Inte ellipse of inertia. Inte ils - tests of mechanic pass-section design, th uess, adhesion, tough Z sly informed about te</td> <td>2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2</td>	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Inte ellipse of inertia. Inte ils - tests of mechanic pass-section design, th uess, adhesion, tough Z sly informed about te	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia - kinetic energy momentations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through the use of tests.	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Inte ellipse of inertia. Inte ils - tests of mechanic pass-section design, th uess, adhesion, tough Z sly informed about te	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2
Interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cores-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of harder frabBMT Medical Terminology Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through th	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Inte ellipse of inertia. Inte ils - tests of mechanic pass-section design, th uess, adhesion, tough Z sly informed about te	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending, bending curve, torsional stress, cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through the use of	KZ are technology. Practic e exercises. Z,ZK moment effect - decorrinined systems - more of rotational motion, 1 ellipse of inertia. Inte ils - tests of mechanic uss-section design, the iess, adhesion, toughing Z isly informed about te KZ	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, core cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardr F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through the use of test	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Intellipse of inertia. Intellipse section design, this - tests of mechanic loss-section design, thises, adhesion, toughing Z Issly informed about test KZ duces students to the KZ cluces students to the KZ cluces students to the	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health crepeented including health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, or cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardrift stress and deformations. Hooke's law. Stress and streng the ontinuous knowledge check up through the use of tests. F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures.	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Intellipse of inertia. Intellipse of mechanic is - tests of mechanic KZ duces students to the KZ eripherals, the program A Cortex M architectu signal processing, bar	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C.
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, core cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardr F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through the use of test	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Interests of mechanice is - tests of mechanice KZ ucces students to the KZ duces students to the KZ eripherals, the program A Cortex M architectu signal processing, bar r use in biomedicine.	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C. It manages the
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, or cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hard of the factor working and presenting of bachelor's thesis. F7ABBMVP Research Methodology The course introduces students to the basic methods of research work and the requirements for scientific communication. The course also introd writing and presenting of bachelor's thesis. <t< td=""><td>KZ are technology. Practice e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Interests of mechanice is - tests of mechanice KZ duces students to the KZ eripherals, the program A Cortex M architectu signal processing, bar r use in biomedicine. serial and parallel corr</td><td>2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C. It manages the nmunication,</td></t<>	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Interests of mechanice is - tests of mechanice KZ duces students to the KZ eripherals, the program A Cortex M architectu signal processing, bar r use in biomedicine. serial and parallel corr	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C. It manages the nmunication,
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cor cross-sections, combined with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and theraputeres. Students on the basic methods of research work and the requirements for scientific communication. The course also introvirtin	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrent of rotational motion, ellipse of inertia. Interests of mechanice is - tests of mechanice KZ duces students to the KZ eripherals, the program A Cortex M architectu signal processing, bar r use in biomedicine. serial and parallel corr	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C. It manages the nmunication,
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, plan moments of inertia - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, or cross-sections, combined with particular terms flowing from latin but also greek expressions during their lectures. Students are continuou diagnosis and therapeutical procedures. Education is combined with continuous knowledge check up through the use of tests. F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuou diagnosis and therapeutical procedures. Edu	KZ are technology. Practice e exercises. Z,ZK moment effect - decarrent of rotational motion, of rotational motion, ellipse of inertia. Intellis - tests of mechanic liss-section design, the ises, adhesion, tought Z issty informed about tests KZ duces students to the KZ eripherals, the progration of cortex M architectures ising and parallel cordisplays, keyboards, F	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C. It manages the nmunication, RS232, Ethernet, 2
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, stresses and deformations, Newton's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, roces-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardr F7ABBMT Medical Terminology Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuou diagnosis and therape-uical models. Stores and in the continuous knowledge check up through the use of tests. F7ABBMVP Research Methodology The course introduces student	KZ are technology. Practice e exercises. Z,ZK moment effect - decarrent of rotational motion, of rotational motion, ellipse of inertia. Intellists - tests of mechanic lists - tests of mechanic lists - tests of mechanic lists - tests of mechanic lists, adhesion, toughing a section design, the tests, adhesion, toughing a section design a section design a section design a section design a section design, the tests, adhesion, the tests, adhesion, toughing a section design a section design a section design, the tests, adhesion, the tests, adhesion, toughing a section design, the tests, adhesion, tests, adhesion, tests, adhesion, tests, adhesion, tests, adhesion, tests, adhesion, toughing a section design, tests, adhesion, tests, adhesind dott, adhesind dott, adhesion, tests, adhe	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical isics of ISO C. It manages the nmunication, RS232, Ethernet, 2 ave imaging
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into benjulibrium. Reactions on statically deters spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, moment, Mohr circle, main moments of inertia, stresses and deformations, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuous diagnosis and therape-tuces tudents to the basic methods of research work and the requirements for scientific communication. The course also introvirting and presenting of bachelors thesis. F7ABBMVP Research Methodology The course introduces students to the basic methods of research work and the require	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrained systems - molion of rotational motion, ellipse of inertia. Intervise uses, adhesion, toughing Z usely informed about tervise KZ duces students to the KZ eripherals, the program A Cortex M architecture signal processing, bar r use in biomedicine. serial and parallel corr displays, keyboards, F KZ ons. Basics of microw ave detection and cla	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical usics of ISO C. It manages the nmunication, RS232, Ethernet, 2 ave imaging ssification of
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, stresses and deformations, Newton's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, roces-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardr F7ABBMT Medical Terminology Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuou diagnosis and therape-uical models. Stores and in the continuous knowledge check up through the use of tests. F7ABBMVP Research Methodology The course introduces student	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrained systems - molion of rotational motion, ellipse of inertia. Intervise uses, adhesion, toughing Z usely informed about tervise KZ duces students to the KZ eripherals, the program A Cortex M architecture signal processing, bar r use in biomedicine. serial and parallel corr displays, keyboards, F KZ ons. Basics of microw ave detection and cla	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical usics of ISO C. It manages the nmunication, RS232, Ethernet, 2 ave imaging ssification of
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care including health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, crc cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardre F7ABBMT Medical Terminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuou diagnosis and therapeutical procedures. F7ABBMT Me	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrained systems - molion of rotational motion, ellipse of inertia. Intervise uses, adhesion, toughing Z usely informed about tervise KZ duces students to the KZ eripherals, the program A Cortex M architecture signal processing, bar r use in biomedicine. serial and parallel corr displays, keyboards, F KZ ons. Basics of microw ave detection and cla	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical usics of ISO C. It manages the nmunication, RS232, Ethernet, 2 ave imaging ssification of
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health or presented including health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, - beam, system of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia stresses and deformations, Hook's law. Stress and strin - unixalia and biaxial stress state, simple bending, bending ourve, torsional stress, cr cross-sections, combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardr F7ABBMT Medical Terrminology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during the use of tests. F7ABBMTP Research Methodology F7A	KZ are technology. Practice of rotational motion, of rotational motion, ellipse of inertia. Inte lis - tests of mechanice pass-section design, th less, adhesion, tought Z isly informed about te KZ duces students to the KZ chores M architectu signal processing, bar r use in biomedicine. serial and parallel cordisplays, keyboards, F KZ ons. Basics of microw ave detection and cla erthermia. Planning to Z,ZK	2 cal cases are 4 omposition, tion restrictions, product moment, rnal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical usics of ISO C. It manages the nmunication, RS232, Ethernet, 2 ave imaging ssification of reatment. Design 4
interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. F7ABBMAT Marketing of Medical Technology Marketing fundamentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included in the F7ABBMEC Mechanics Mechanics Students will get acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and replacement. Equilibrium. Genome of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically dete spatial and planar constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy momentum, law of conservation of momenture. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia - kinetic energy momentum, law of conservation of momentures static effects, kinematic method, statically indeterminate problems. Mechanical properties of materia terses sections, combined states, Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardref F7ABBMT Medical Terminology Methodology Attendants are made acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuou diagnosis and therapeutical procedures. Education is combined with continuous knowledge check up through the use of tests. F7ABBMT Mecroprocessors in Biomedicine F7ABB	KZ are technology. Practice e exercises. Z,ZK moment effect - decorrined systems - molion of rotational motion, ellipse of inertia. Intellis - tests of mechanice bass-section design, this uses, adhesion, tought Z uses, adhesion, tought KZ duces students to the KZ eripherals, the program A Cortex M architectu signal processing, basis r use in biomedicine. serial and parallel cordisplays, keyboards, F KZ ons. Basics of microwaice detection and clae erthermia. Planning to Z,ZK or a new, respectively	2 cal cases are 4 omposition, tion restrictions, product moment, rmal static effects cal properties, in-walled ness, tribological. 1 rms of whole 2 principles of 2 mming model of res with practical usics of ISO C. It manages the nmunication, RS232, Ethernet, 2 ave imaging ssification of reatment. Design 4 additional

F7ABBMFJ	Physical Phenomena Modeling in COMSOL MULTIPHYSICS	KZ	2
	re increasingly being used to develop new and optimize existing products and devices. Numerical simulations can greatly re		
, i i i i i i i i i i i i i i i i i i i	cantly accelerate and reduce development costs. Another sector where numerical simulations are used is a sector where it is		
	the biological tissue under electrodes for direct brain simulation). Last but not least, based on numerical simulations, we can	-	
	roperties, we can define the amount of power delivered to the device (eg radiofrequency ablation in oncology or cardiac surg		-
	r, setting of material properties and boundary conditions and, last but not least, the choice of differential equations, the method g of results. The accuracy of the results obtained, the length of calculations and the computational power requirements are ve		
	res cover the most common problems in electrical engineering, thermics, mechanics, chemistry, acoustics and fluid dynamic		
-	the designing individual parts of devices and devices.	S. The acquired K	nowledge will be
F7ABBNMP	Project Proposal and Management	KZ	2
	students will become familiar with topics such as project management (PM) according to IPMA, the certification process, pro		
	e, as well as project initiation. They will learn about the feasibility study, project initiation, project identification document, and		
	o project planning, scheduling, risk and risk analysis, project implementation, behavioral competencies in PM, project closur	•	
	its from a hospital environment. During the exercises, students will master the following concepts and topics and develop rele		
	ument, logical framework, WBS (Work Breakdown Structure a hierarchical structure of tasks or activities), scheduling, risk and	-	-
a final test. As part of th	is course, students have the opportunity to obtain the IPMA Level D certification, which is intended for aspiring project mana	igers, project coor	dinators, and
team members. The cer	tification is valid for five years.		
F7ABBOIZ	Protection Against Ionizing Radiation	ZK	2
The aim of the course is	to give students an overview of the issues of protection against ionizing radiation and dosimetry in general and in a speciali	ized medical work	place. Student
will studied properties of	f basic types of ionizing radiation, sources of ionizing radiation, interaction of gamma radiation with matter, interaction of cha	rged particles with	n matter, photon
and electron beam pass	age through the matter, units used in dosimetry and radiation protection, operational units for working and environment monit	oring, dose measu	urement, internal
contamination, shielding	g of simple sources. Special attention is paid to the exposure control of workers, residents and patients. In course students will	I give invormation	about legislative
interpretation of dosage	limits. Entry requirements of the course: Structure of matter, basic types of nuclear transformations. Properties of basic type	es of ionizing radia	tion, sources of
e e	ction of gamma radiation with matter, interaction of charged particles with matter, passage of photon and electron beams thr	0	
	dge, skills, abilities and competences: Units used in dosimetry and radiation protection. Principles and goals of radiation protection and the second s		
-	radiation and protection against internal contamination. Dose limitation system, ionizing radiation in legislation of Czech Re	public. Ionizing ra	diation use in
healthcare.			
F7ABOPO	OPT Project	KZ	5
	methodical guidance of students in scientific research or development activities in the field of Optics, Optometry or Ophthal		
	e project, which will lead to the final Bachelor's Thesis (BP). The secondary objective of the course is to guide students in the		•
-	ned task, applying the practices of the field to the tasks or projects solved by the students, as well as deepening the community the leaved as of the practice including programming marks at a	nication skills of th	ie students. Last
	the knowledge of typographic rules, including proofreading marks, etc.	71/	0
F7ABOOFP	Opthalmology Instruments	ZK	3
	different diagnostic and therapeutic ophthalmic devices will be discussed. Students will be able to test most of machines dur		
	physical principles, technical construction and parameters of following devices and methods will be studied: slit lamp, ophtha	imoscope (direct a	
annfanal ananning) rati	accord refrectementar tenemeter completer ligidalbarg refinal temegraph, entical experience temegraphy refinal parts fi		
	noscope, refractometer, tonometer, campimeter, Heidelberg retinal tomograph, optical coherence tomography, retinal nerve fi		(GDx), specular
(endothelial) microscope	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing		(GDx), specular
(endothelial) microscope POLA-test, ortopic mac	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing.	of refractive balan	(GDx), specular ce, eikonometer,
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers	of refractive balan	(GDx), specular ce, eikonometer, 2
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation, connections with other disciplines.	of refractive balan Z,ZK mentation of a sel	(GDx), specular ce, eikonometer, 2 ected model of
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers	of refractive balan Z,ZK mentation of a sel rs. Environment, s	(GDx), specular ce, eikonometer, 2 ected model of cenario creation
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation, connections with other disciplines.	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice.
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impler d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice.
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implet d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bs. Collaboration between HPS and anaesthesia machine.	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing,
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impler d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implet d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bs. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bas. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) .	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, s	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implet d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bs. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 d programming 1
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, s F7ABBPPM1 The aim of the course is	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bas. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I.	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 d programming 1
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, s F7ABBPPM1 The aim of the course is	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bas. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 d programming 1
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, C F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bas. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N d work with data and their vizualization. The course is followed by the course Programming in Matlab II.	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted dimplementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in Natlab II. Programming in Matlab II.	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ isic toolboxes. The	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from course	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted dimplementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in Ned work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ isic toolboxes. The	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 programming 1 hey will learn 2 course requires
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from course	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N d work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba ree Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vision the programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vision the programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vision the programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vision the programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vision to the programming in	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ isic toolboxes. The	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N d work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba ree Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vis well the students will learn to create basic user interfaces.	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ K, Powerpoint) and KZ Aatlab language, t Isic toolboxes. The sualize data and h KZ	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 programming 1 hey will learn 2 course requires ow to work with 4
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, 4) F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design.	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N divers will consolidate and widen their previous knowledge with the Matlab environment, programming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with barse Programming in Matlab I. The students will learn how to create functions and scripts in Section of several software tools is a caquained or several software tools will be an anaesthesia will learn how to create functions and scripts in N divers will consolidate and widen their previous knowledge with the Matlab environment, programming language and with barse Programming in Matlab II. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recomment	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Autlab language, t KZ Natlab language, t KZ KZ Vatlab language, t	(GDx), specular ce, eikonometer, 2 ected model of iccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, 4) F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design documentation and boa	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted dimplementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N ad work with data and their vizualization. The course is followed by the course Programming in Matlab II. Prog	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ sisic toolboxes. The sualize data and h KZ ysis, determination dations, preparati onal device (mour	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical ting, soldering,
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design documentation and boa recovery) electronic the	 a, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula us. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N d work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with base Programming in Matlab II. Design and Construction of Medical Devices/Practical Exercises ly oriented course is to acquaint students will learn how to create functions and scripts in Matlab, how to manipulate and visce origing and Construction of Medical Devices/Practical Exercises ly oriented course is to acquaint students will learn how to create functions and scripts in Matlab, how to manipulate and visce Programming in Matlab II. pesign and Construction of Medical Devices/Practical Exercises ly oriented course is to acquaint students with the d	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ sisic toolboxes. The sualize data and h KZ ysis, determination dations, preparati onal device (mour pped with THT co	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical ting, soldering, mponents) and
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implered dimplementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula os. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash). Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M dwrk with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba as Programming in Matlab II. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recommen if design, printed circuit board, its mounting, soldering and revitalization. During the course, students will implement a functir mometer, which will consist of two functional units - analog part for temperature measurement and signal conditioning (equi de bargraph (equipped with SMT components). For both products, students will implement the design o	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ sisic toolboxes. The sualize data and h KZ ysis, determination dations, preparati onal device (mour pped with THT co B in the CAD envir	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE.
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, A F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog	 a, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementations of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simulators. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash). Programming in Matlab I. sto acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M dwork with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. protect course is to acquaint students will learn how to create funct	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ sisic toolboxes. The sualize data and h KZ ysis, determination dations, preparati onal device (mour pped with THT co B in the CAD envir	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE.
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R, , F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and impleted d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula b. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M ad work with data and their vizualization. The course is followed by the course Programming in Matlab II. Urogramming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba se Programming in Matlab II. udents will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recomment recomment, which will consist of two functional units - analog part for temperature measurement and signal conditioning (equi de bargraph (equipped with SMT components). For both products, students will implement the design of the diagram and PCC part of the device, an application for digitizing data from the analog device using NI-DAQ cards and a cheap solution with the the arvice i	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ (, Powerpoint) and KZ Matlab language, t KZ sisic toolboxes. The sualize data and h KZ ysis, determination dations, preparati onal device (mour pped with THT co B in the CAD envir elp of Arduino will	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical itting, soldering, mponents) and onment EAGLE. be implemented.
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., C F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the si Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implete d implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula to collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M ad work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. Programming in Matlab I. Programming in Matlab I. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students will learn how to create functions and scripts in Matlab, how to manipulate and vis well the students will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recommen rd design. printed circuit board, its mounting, soldering and revitalization. During the course, students will implement a functi romometer, which will consist of two functional units - analog part f	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Aatlab language, t kZ ysis, determination dations, preparation and device (mour pped with THT co B in the CAD envir elp of Arduino will KZ	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical ating, soldering, mponents) and onment EAGLE. be implemented. 2
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI F7ABBPMS	 a, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tested dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bs. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash). Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N and work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba are Programming in Matlab I. programming in Matlab I. protection of Suitable components and their values with emphasis on working with catalog sheets and application recomment of design. priores of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recomment of design. printed circuit board, its mounting, soldering and revitalization. During the course, students will implement a function mometer, which will consist of two functional units - analog part for temperature measuremen	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ sisic toolboxes. The sualize data and h KZ ysis, determinatio dations, preparati onal device (mour pped with THT co B in the CAD envir elp of Arduino will KZ Z,ZK	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE. be implemented. 2 4
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the si Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPNS Objectives: to familiarize	 a, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and states and plantoms implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit . Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula se. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash). Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M dwork with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. to acquaint students with the metry will learn how to create functions and scripts in M dwork will data and their previous knowledge with the Matlab environment, programming language and with ba se Programming in Matlab I. Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and vis well the students will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recommen red design, printed circu	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ Sisc toolboxes. The sualize data and h KZ Sisc toolboxes. The sualize data and h Sisc toolboxes. The sualize data and h Sisc toolboxes. The sualize data and h Sisc toolboxes. The Sisc	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE. be implemented. 2 4 : Knowledge of
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the si Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPNS Objectives: to familiarize mathematics (linear alg	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing hines, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implet di molementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and teste dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula bas. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash). Programming in Matlab I. to acquaint students with the Mallab environment and language. Students will learn how to create functions and scripts in M d work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. De students will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recommen remometer, which will consist of two functional units - analog part for temperature measurement and signal conditioning (equi d bargraph (equipped with SMT components). For both products, students will implement the design of the device, an application for digitizing data from the analog device using NI-DAQ cards and a cheap solution with the herice intervention in the device (monitor of vital functions) with emphasis on safe handling and meas	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ K Matlab language, t KZ K Matlab language, t KZ K Matlab language, t KZ K KZ K Matlab language, t KZ K Matlab language, t K K K K K K K K K K K K K	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical ating, soldering, mponents) and onment EAGLE. be implemented. 2 4 : Knowledge of bilities and
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the si Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI F7ABBPNS Objectives: to familiarize mathematics (linear alg competencies: The study	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing innes, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and tester dures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilit 0. Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula s. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CS, bash). Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in the dwork with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba se Programming in Matlab I. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students will the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with membraiss on sortents will mement and signal conditioning (equi design prince). For both products, students will mement and acheap solution with the hervice intervention in the device, in origitizing data from the analog device using NI-DAQ cards and a cheap solution with the hervice intervention. Surigitian and revitalization. During the course, students will implement a function roomment of the device, an application of vi	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ K Matlab language, t K K K K K K K K K K K K K	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical ating, soldering, mponents) and onment EAGLE. be implemented. 2 4 : Knowledge of bilities and these definitions
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., C F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the si Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI F7ABBPNS Objectives: to familiarize mathematics (linear alg competencies: The stud to practical problems th	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing innes, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers imulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers basic principles of anesthesiology. Other types of simulators and phantoms. Possibilit Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula ps. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash). Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in Na work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab II. udents will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recomment revice intervention in the device (monitor of vital functions) with emphasis on safe handling and easarement of test points. Principles and Practice in Tissue Engineering Probability and Mathematical Statistics s etudents with the probabilistic definitions of Kolmogorov theory of probability and inductive statistics. The atries in other areas of professional work and a course. Students will implement the design of distignee for organ ming in Matlab I. Programming in Matlab I. Constituent of Matla	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ K Matlab language, t K K K K K K K K K K K K K	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical ating, soldering, mponents) and onment EAGLE. be implemented. 2 4 : Knowledge of bilities and these definitions
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the si Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI F7ABBPNS Objectives: to familiarize mathematics (linear alg competencies: The stud to practical problems th and can choose a suita	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing innes, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of inplementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers basic principles of an esthesiology. Other types of simulators and phantoms. Possibilit connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula s. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M dwork with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. to acquaint students will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recomment design, printed circuit board, its mounting, soldering and revitalization. During the course, students will neplement a function moment, which will consid to two functional units - analog part for themperature measurement and application recomment design, printed circuit board, its mounting, soldering and revitalization. During the course, students will member an analog and the transe in other with the basic process of the measuring part of the device, ie basic problem analy select	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ K Matlab language, t KZ Matlab language, t KZ K Matlab language, t KZ K Matlab language, t KZ K Matlab language, t K K K K K K K K K K K K K	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE. be implemented. 2 4 : Knowledge of poilities and these definitions ductive statistics
(endothelial) microscopp POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI F7ABBPTI F7ABBPMS Objectives: to familiarize mathematics (linear alg competencies: The stud to practical problems th and can choose a suita F7ABBPP	 a, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing innes, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers invulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers to the simulator with other medical equipment. Simulators and testers. Implementation of an established simulatas. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Late/Java, CSS, bash). Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in N and work with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab II. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba se Programming in Matlab II. Programming in Matlab I. udents will consolidate and widen their previous knowledge with the Matlab environment, programming language and with ba se Programming in Matlab II. Programming in Matlab I. Design and Construction of Medical Devices/Practical Exercises Voriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analyselection of sultable components and their values with emphasis on working with catalog sthest and application recommen design prince and exite and plication recomment and ensign device apaplication for digitizing data from the analog device using NI-	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ	(GDx), specular ce, eikonometer, 2 ected model of ccenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE. be implemented. 2 4 : Knowledge of oilities and these definitions ductive statistics
(endothelial) microscope POLA-test, ortopic mac F7ABBPPS Patient and instrument a subsystem. Design ar and other related proce Practical demonstration creation of new scenari F7ABBPPP Introduction to software languages (Python, R., G F7ABBPPM1 The aim of the course is about data structures a F7ABBPPM2 During the course the st Matlab basics from cou the basic toolboxes. As F7ABBPNK The aim of the practical blocks and their design, documentation and boa recovery) electronic the display element with dic In addition to the analog The last part will be a s F7ABBPTI F7ABBPNS Objectives: to familiarize mathematics (linear alg competencies: The stud to practical problems th and can choose a suita F7ABBPP	e, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing innes, Hertel exophthalmometer, devices for color vision testing. Patient and Device Simulators and Testers simulators and testers. Basic principles of inplementation, connections with other disciplines. Detailed description and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers basic principles of an esthesiology. Other types of simulators and phantoms. Possibilit connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simula s. Collaboration between HPS and anaesthesia machine. Programming Tools tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, Latex lava, CSS, bash) . Programming in Matlab I. to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in M dwork with data and their vizualization. The course is followed by the course Programming in Matlab II. Programming in Matlab I. to acquaint students will learn to create basic user interfaces. Design and Construction of Medical Devices/Practical Exercises y oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analy selection of suitable components and their values with emphasis on working with catalog sheets and application recomment design, printed circuit board, its mounting, soldering and revitalization. During the course, students will neplement a function moment, which will consid to two functional units - analog part for themperature measurement and application recomment design, printed circuit board, its mounting, soldering and revitalization. During the course, students will member an analog and the transe in other with the basic process of the measuring part of the device, ie basic problem analy select	of refractive balan Z,ZK mentation of a sel rs. Environment, s ies of use in clinic tion scenario, sce KZ Aatlab language, t KZ Matlab language, t KZ Sic toolboxes. The sualize data and h KZ Matlab language, t KZ Sic toolboxes. The sualize data and h KZ Matlab language, t KZ Matlab language, t KZ Sic toolboxes. The sualize data and h	(GDx), specular ce, eikonometer, 2 ected model of cenario creation al practice. nario testing, 2 d programming 1 hey will learn 2 course requires ow to work with 4 n of functional on of electrical nting, soldering, mponents) and onment EAGLE. be implemented. 2 4 :: Knowledge of bilities and these definitions ductive statistics

F7ABBPSL Psychology	KZ	2
Development, methodology and methods of psychology. Mental activities and psychic processes, psychology of personality, objects of psychology a	1	1
Modern psychology; its concept and theory, psychic processes and stages. Psychological interpretation of personality. Application of knowledge in I		-
technicians and medical doctors, technicians and patients, technicians and nurses. Communication as a tool for good cooperation amongst people		
expression and communication skills. Use of elocution and gestures in personal expression. Verbal and nonverbal communication. Dialogue; types		
dialogue. Model situations. Communication process as part of economics - components, tools and functions.	0 / 1	5
F7ABBSPR1 Semestral Project I.	KZ	1
The topic of the semester project (SPR1) must be in the field of biomedical engineering and must be related to the study field of the same name B	1	
available for the relevant academic year in the database projects.fbmi.cvut.cz Note: It is not possible to implement economic-managerial topics, to		-
research, clean programming, topics purely in the field of biology, etc. The application must always be part of the work in accordance with the focu		
be related to technology (medical devices, or the scope of work of a Biomedical Technician in clinical practice)! Entries that do not fall into the abo		
F7ABBSPR2 Semestral Project II.	KZ	4
The main idea is to start work on a project which can be improved in time and finish as a Bachelor thesis. In the course will be discussed topic as ba		1 -
skills, including teamwork and project management. Creation of presentations and written texts. Typography rules. Types, purpose and requirement		
technical texts. Writing a commented bibliographic search. The student solves topic (project) from the selection of the PROJECTS database - http://www.action.com/actio	-	
term, there are dedicated 2 hours every week for work under teacher supervising.		0
F7ABBSM Sensors in Medicine	Z,ZK	4
This subject provides information about basic electronic devices - sensors, describes their operation principle, basic circuit configuration and appli	1	1 -
clarifying of basic principles and practical utilization. Integral part of this course is basic information about sensors of non-electric quantities and the		-
sensors (force, pressure, torque, vibration, displacement, acceleration etc.) magnetic field sensors, temperature sensors, chemical sensors, optical		-
is aid on miniaturization, integration		
F7ABBSEL Power Engineering	Z.ZK	5
Basics of power electronics, power supplies, including electrochemical sources, rectifiers, stabilizers, the most commonly used types of motors, ba	1 '	-
electrical systems and connecting appliances with a focus on medical use. Emphasis is placed primarily on the physical nature of the problem and		
be verified on practical examples and in the laboratory.		
F7ABBSJ Scripting Languages	KZ	2
The aim of the course is to understand the topic of scripting languages and their applications, to understand their advantages and disadvantages and	1	
Inguages. Students will become familiar with regular expressions and tools for word processing. The course focuses on the scripting languages with the students will become familiar with regular expressions and tools for word processing. The course focuses on the scripting languages with the students will become familiar with regular expressions and tools for word processing. The course focuses on the scripting languages with the students wi	•	
the scripting languages Python.		aling system and
	Z,ZK	4
	1	1 -
The main objective of the course is to introduce students to the basic equipment of intensive care units (ICU) and anesthesiology and resuscitation are devices to support vital functions, especially lung ventilation, as well as patient monitors, anesthesia machines and their parts and other equipment of intensive care units.	-	-
is to integrate knowledge and skills of students from the fields of science (especially physics, chemistry and physiology) and engineering (modeling		
etc.) in the analysis of clinical technology and in the design and implementation of functional technical systems.	, encour theory, price	
	Z,ZK	4
F7ABOSUR1 Subjective Refraction I. Basic knowledges about refraction of the eye. Techniques of the subjective refraction perform testing frame or the phoropter. Techniques of the exa		
		1
F7ABOSUR2 Subjective Refraction II.	Z,ZK	4
During the lectures, students deepen their theoretical knowledge and practical skills of subjective refraction with the test frames and test sets of gl	asses. Further tests	s will follow on
binocular balance, practice working with phoropter and other techniques.		
F7ABBTEL Theory of Electrical Engineering	Z,ZK	4
Electric current, DC and AC currents. Electrical curcuits including R, L, C. Power of electric current, thermal effect of electric current. Distribution of		
electrical systems. Input resistance and impedance, idle voltage, inner resistance and impedance of the source, mutual loading of the source and		
matching. Properties of circuits in time and frequency domain. Transient action in DC circuits, frequency characteristics of the L/C circuit. Electrical		
the conductivity, creation of the semiconductor crossing, properties in the forward and reverse direction. Bipolar transistor - transistor effect, basic pri		
transistor. Unipolar transistors with complementary vodivosti (CMOS). Electromagnetic effects (induction, magnetization, force effect). Electromagnetic effects and parameters. Magnetic reservices and reproduction	, 1	U ,
electromagnetic compatibility. Soft and hard magnetic materials. Transformers construction and parameters. Magnetic recording and reproduction		1 1
F7ABBTZS Tomographical Imaging Systems	Z,ZK	4
CT systems (basic principle, schematic arrangement system, basic physical principle, developmental generations, basic principles of reconstruction		-
resonance. PET and SPECT principle. Specialized imaging systems (hybride). Ultrasound imaging systems. Doppler systems. Subject and especial students with an insistent state of the size of the state of the size		-
students with an insight into the principles of creating image data used in medicine, the principle of methods their scanning, digitization and subset		in the principle of
function and properties of scanning image means in context, which is important especially in terms of interdisciplinarity of the subject and the field		
F7ABBUSS Introduction to Signals and Systems	Z,ZK	4
To introduce students to basics of theory of signals and systems. To explain main principles on applications from biology and medicine. To become	acquainted with ba	asic mutual
relations in computer laboratories by means of MATLAB.		
17AVARP1 Research Project I.	KZ	10
Methodology study Outputs (written text and presentations using required templates, both in English):methodology (background, SOTA, statement		
and aims, methods, potential significance and applications, time schedule, outline of the project content, relationship between student and supervision		
internal and external collaboration, financing budget for project, list of references based on the ISO690 and ISO 690-2 standard) Registration and lin		
and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignm	ent of the selected	topic in English
approved within the system PROJECTS is required.		
17AVARP2 Research Project II.	KZ	10
Simulation/implementation study Outputs (written text and presentations using required templates, both in English): full description of the model, de	-	-
optimizations and/or design of the electrical circuits and other components (phantoms), design of printed boards, *.stl file for 3D printing and/or SV		-
limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. For	iai administration: 1	i ne tormal
assignment of the selected topic in English approved within the system PROJECTS is required.		
17AVARP3 Research Project III.	KZ	10
Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement		
and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can	• ,	
student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the s	JSIEM PROJECTS	is required.

F7ABBZP Fundamentals of Pathology	ZK	2
The main goal of the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human h	health and diseas	e. At the very
beginning of the course the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ s	systems and com	plexity of disease
origin and causes. The course provides a wide overview of morphological and functional conditions in pathology. The knowledge is then simply trans	formable to clinic	al and technical
disciplines used in examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on success	ful finishing of the	course Anytomy
and Physiology II. Release and Results: The students obtain basic outline of pathological processes in the human body. Their skills comprise definition	on of disease, cor	nprehension and
description of pathological changes in organs and body structure. The theoretical basis of the course is oriented to use in technical branches of bion	nedical engineerir	ng.
F7ABBZLN Legislation in Health Care and Technical Standards	KZ	2
Aims / aims: The aim of the course Legislation in Health Care and Technical Standards is to teach students the basic requirements and regulatory of	bligations in healt	hcare, especially
in the field of medical devices. During the course, students will learn the basics of legislation process, as well as regulation related to the medical device	ces, Iso with legis	lative regulations
in the field of clinical trials and the operation of medical devices. Furthermore, students will learn the legal context of providing health care. The aim i	s to acquaint stud	dents with the
rights and obligations arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations	s, but on acquaint	ing students with
the main points and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Preve	quisites and co-re	quisites: To
successfully complete the course, students should know the basics of the principles of medical devices due to the practical application of legislation	in this area. Outp	ut knowledge,
skills, abilities and competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be	able to orientate h	nimself in a given
problem related to legislation without any problems and he should know where he can find individual details related to legal issues in health care.		
F7ABBZOD Image Data Processing	KZ	2
Continuous image representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contras	t, resolution, nois	e, look up tables,
histogram, Discrete Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation	ns, image restora	ation, image
segmentation, basic principles of image compression.		

List of courses of this pass:

17AVACC Czech for Foreigners Survivol 22ech KZ 3 17AVARP1 Research Project I. KZ 10 Methodogy study Outputs (written text and presentations using required templates, both in English): methodology (tackground, SOTA, statement of the project objectives hypothesis and ams, methods, potential significance and applications, time schedule, outhing of the project. Jist of references based on the ISO80 and ISO 800-2 standard) Registration and limitations. There are no prerequisites and this course can be registered by sudents within the sudent exchange programme Ensames - only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. KZ 10 Simulation/implementation study Outputs (written text and presentations using required templates, both in English): full description of the model, description of the simulation steps and limitations. There are no prerequisites and this course can be registered by students within the student exchange programme Ensamuse - only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. KZ 10 17AVARP3 Research Project III. KZ 10 17AVARP3 Research Project	Code	Name of the course	Completion	Credits
17AVARP1 Research Project I. KZ 10 Methodology study Outputs (written text and presentations using required templates, both in English):methodology (background, SOTA, statement of the project object like, prophesis and ariams, methods, potential significance and applications, time schedule, outline of the project content, relationship between student and superviser, relevant courses (prevaluation); financing budget for project, list of references based on the ISO690 and ISO 6902_standard). Registration and limitations: There are no prerequisites approved within the system PROJECTS is required. 17AVARP2 Research Project II. KZ 10 Simulation/implementation study Outputs (written text and presentations using required templates, both in English): full description of the model, description of the simulation steps and optimizations and/or design of the electrical circuits and other components (phantoms), design of phined boards, "sill for 3D printing and/or SW implementation Registration and iminitations: There are no prerequisites and this course can be registered by students within the system PROJECTS is required. KZ 10 17AVARP3 Research Project III. KZ 10 17AVARP3 Introduction to fieldied duty, incloding the relationship between the content of studie	17AVACC	Czech for Foreigners	KZ	3
Methodogy study Outputs (written text and presentations using required templates, both in English):methodogy (background, SOTA, statement of the project objectives hypothesis and mis methods, potential significance and applications, time schedules, outline of the project otherit, relationship between student and supervises (potential networks), relevant ocurses (potentines), relevant ocurses), relevant ocurses (potential		Survival Czech	I	1
and aims, methods, poternilal significance and applications, time schedule, outline of the project content, relations Tipe between student and supervisor, relevant courses (optional only), internal and external collaboration, financing budget for project, list of references based on the ISO690 are standard) Registration and limitations. There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration. The formal assignment of the selected topic in English, fluid exciption of the model, description of the simulation steps and optimizations and redirch registration and limitations. There are no prerequisites and other components (phartoms), design of printed boards, "still file 'SD printing and/or SW implementation Registration and limitations. There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English. Phoroved within the system PROJECTS is required. TAVARP3 Research Project III 	17AVARP1	Research Project I.	KZ	10
Internal and external collaboration, financing budget for project, list of references based on the ISO680 and ISO 690-2 standard) Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English Simulation/implementation study outputs (written text and presentations using required templates, both in English): full description of the model, description of the simulation steps and point administration: The rear en opterequisites and this course can be registered by students within the system PROJECTS is required. TAVARP3 KZ 10 TAVARP3 Research Project III. KZ 10 Towards VO outputs (written text and presentations using required templates, both in English): full description of the system PROJECTS is required. 10 TAVARP3 Research Project III. KZ 10 Towards VO outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and/or SW writtentation, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the system PROJECTS is required. TAVAUBME Introduction to field of study, including the relationship between the content of biomedical engineering, and a demonstration of the course is to implement an introduction to the field of study, including the relationship and possible applications, including a simulate scheme and professional accilication and elimitation (or the course) is observation of the course is to increases studentes and ustrip and or Students and of the course, the spo	Methodology study	y Outputs (written text and presentations using required templates, both in English):methodology (background, SOTA, statement of th	e project objectives	s hypothesis
and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. TAVARP2 KZ 10 Simulation/implementation study Outputs (written text and presentations using required templates, both in English): It description of the model, description of the simulation responsence (pharmony), design of privine administration Registration Registration and primizations and other components (pharmony), design of privine administration? Win implementation Registration and programme to its selected topic in English approved within the system PROJECTS is required. IVI TAVARP3 Research Project III. KZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus - only, Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. TAVARP3 Introduction to the field of study, including the relationship between the content of biomedical engineering, and administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. TAVADBME Introduction to Biomedical Engineering Z 2 2 2 2 2 2 2	and aims, method	s, potential significance and applications, time schedule, outline of the project content, relationship between student and supervisor, r	elevant courses (op	tional only),
approved within the system PROJECTS is required. KZ 10 Simulation/implementation study Outputs (written text and presentations using required templates, both in English): full description of the model, description of the simulation steps and optimizations and/or design of the electrical circuits and other components (phantoms), design of printed boards, "still fiel for 3D printing and/or SW implementation Registration and illinitations: There are no prerequisites and this course can be registread by student exchange programme Frasmus - only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. IZ 10 TAVARP3 Research Project III. KZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the system PROJECTS is required. 17AVABME Introduction to Biomedical Engineering Z 2 <td>internal and extern</td> <td>al collaboration, financing budget for project, list of references based on the ISO690 and ISO 690-2 standard) Registration and limitati</td> <td>ons: There are no p</td> <td>rerequisites</td>	internal and extern	al collaboration, financing budget for project, list of references based on the ISO690 and ISO 690-2 standard) Registration and limitati	ons: There are no p	rerequisites
TAVARP2 Research Project II. KZ 10 Simulation/implementation study Outputs (written text and presentations using required templates, both in English): full description of the model, description of the simulation steps and optimizations and for design of the electrical circuits and other components (phantoms), design of printed boards, "still for 3D printing and/or SW implementation Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. KZ 10 TAVARP3 Research Project III. KZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17AVADBME Introduction to Biomedical Engineering Z 2 2 17AvADBME Introduction to the inde of study, including the relationship batween the content of biomedical engineering, the study plan, the requirements of cach tegsibilities of other professional activities of students. The ourse also includes a description of the disciplines of biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients	and this course ca	an be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment	of the selected topi	c in English
Simulation/implementation study Outputs (written text and presentations using required templates, both in English): full description of the model, description of the simulation steps and optimizations and/or design of the electrical circuits and other components (phantoms), design of printed boards, "still fie for 3D printing and/or SW implementation. Registration and iminitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus- only. Formal administration: The formal study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17AVAUBME Introduction to Biomedical Engineering 2 2 2 2. The main goal of the course is to implement an introduction to the field of study, including the relationship between the content of studies and controlled professional practice, here partial goals are motivation for the non-medical health profession, a description of the disciplines of biomedical engineering and a demonstratior of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (profession) in health care will be description of the disciplines of biomedical technician (profession) in health care and the course is to increase students' language competence in academic English and professional accluding applications, including the relationships and possible applications, including the subcet will be description of the different stylistic levels of English and the associated syntactic and lexical a		approved within the system PROJECTS is required.		
optimizations and/or design of the electrical circuits and other components (phantoms), design of printed boards, * still file for 3D printing and/or SW implementation Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. IZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisties and this course can be registered by students within the student exchange programme Erasmus- only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17AVAUBME Introduction to be field of study, including the relationship between the content of biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (professional activities of students. The applications, including a terles of professional accileates in the C2ech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIB (Engluage) IIIB (Engluage) IIIB (Engluage) IIIB (Engluage) IIIIB (Engl	17AVARP2	Research Project II.	KZ	10
Imitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROLECTS is required. 17AVARP3 Research Project III. KZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the stude stude control of studes and control del professional practice, as well as the possibilities of other professional activities of students. The course also includes a description of the content of studes and controlled professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3 English Language IIIB (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vacabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexicical deviexes. F7ABB	Simulation/implem	entation study Outputs (written text and presentations using required templates, both in English): full description of the model, descrip	tion of the simulation	on steps and
assignment of the selected topic in English approved within the system PROJECTS is required. KZ 10 TAVARP3 Research Project III. KZ 10 Experimental study Outputs (written text and presentations using required templates), obtin the English): block scheme of measurement, measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17AVAUBME Introduction to the field of study, including the relationship between the content of biomedical engineering in a d admonstration of all schedus professional advities of students. The course also includes a description of the course in the organizational point of view, the subject will here all professional advities of students. The course also includes a description of the course in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of professional advities of students using that after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 Teach requisities. From the organizational point of view, the subject will have advertees. 2 2 F7ABBA3B English Language IIIB (part 2) KZ 2 F7ABBA51	optimizations and	/or design of the electrical circuits and other components (phantoms), design of printed boards, *.stl file for 3D printing and/or SW im	plementation Regis	stration and
17AVARP3 KZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) KZ 10 Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) KZ 10 and/or SW erdification, result, data statistication processing, discussion Registration and limitations: There are no prerequisites and this course and controlled professional practice, as well as the possibilities of other professional activities of students. The course also includes a description of the disciplines of biomedical technican (profession) in health care or selected reparts in the professional activities of students. The course also includes a description of the disciplines of biomedical technican (profession) in health care or selected reparts in the specific note of the biomedical technican (profession) in health care or selected reparts in the regarizational prior of the course also includes a description of the course and 7 topics of exercises are mentioned be described in connection with the legislation of the Czech Republic and interational relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of vew, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned lexical activities in the summer semester are project-based. F7ABBAS English Language	limitations: The	re are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Forma	al administration: Th	ne formal
Experimental study Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement protocol (see relevant template) and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prequisites and this ourse can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17AVAUBME Introduction to the field of study, including the relationship between the content of biomedical engineering, the study plan, the requirements of Caceh legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (professional societies in the Caceh Republic. From the organizational point of view, the subject will be daught after 2 hours and for that reason only 7 topics of lextures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 Teaching activities in the summer semester are project-based. F7ABBA3 Z,ZK 4 F7ABBA3B English Language IIIB (part 2) Z,ZK 4 Anatomy and Physiology I covers functional aspects		assignment of the selected topic in English approved within the system PROJECTS is required.		
and/or SW verification, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be registered by students within the student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17AVAUBME Introduction to the field of study, including the relationship between the content of biomedical engineering, the study plan, the requirements of Czech legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional activities of students. The course also includes a description of the content of studies and controlled professional practice, as well as the possibilities of other professional activities of students. The course also includes a description of the observed to professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 C The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA51 Anatomy and Physiology I. Anatomy and Physiology I. Z,ZK 4 Anatomy and physiology I covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. F7ABBAF2 Algorithmic and Programming Theory KZ 4 Anatomy and physiology I links to Anatomy and Physiology II. The subject covers functional aspects of particular organs	17AVARP3	Research Project III.	KZ	10
student exchange programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the system PROJECTS is required. 17A/AUBME Introduction to Biomedical Engineering Z 2 The main goal of the course is to implement an introduction to the field of study, including the relationship between the content of biomedical engineering, the study plan, the requirements of Caceh legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional activities of students. The course also includes a description of the disciplines of biomedical technician (profession) in health care of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (profession) in health care Caceh Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabular, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. KZ 2 F7ABBA3B English Language IIIB (part 2) KZ 2 Teaching activities in the subject covers functional aspects of	Experimental stud	ly Outputs (written text and presentations using required templates, both in English): block scheme of measurement, measurement p	rotocol (see releva	nt template)
17AVAUBME Introduction to Biomedical Engineering Z 2 The main goal of the ocurse is to implement an introduction to the field of study, including the relationship between the content of biomedical engineering, the study plan, the requirements of Czech legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional practice, as well as the possibilities of other professional activities of students. The course also includes a description of the disciplines of biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (profession) in health care will be described in connection with the legislation of the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA51 Anatomy and Physiology I. Z,ZK 4 Anatomy and Physiology II. Anatomy and Physiology II. Z,ZK 4 Anatomy and Physiology II. Anatomy and Physiol	and/or SW verification	ation, results, data statistical processing, discussion Registration and limitations: There are no prerequisites and this course can be re	gistered by studen	ts within the
The main goal of the course is to implement an introduction to the field of study, including the relationship between the content of biomedical engineering, the study plan, the requirements of Czech legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional practice, as well as the possibilities of other professional activities of students. The course also includes a description of the disciplines of biomedical technician (profession) in health care will be described in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be also to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA7I Anatomy and Physiology I. Careching activities in the summer semester are project-based. F7ABBAF1 Anatomy and physiology I. Careching activities in the summer semesters of particular organs and their systems. F7ABBAF2 Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy	student exchan	ge programme Erasmus+ only. Formal administration: The formal assignment of the selected topic in English approved within the sys	tem PROJECTS is	required.
of Czech legislation and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studies and controlled professional activities of students. The course also includes a description of the disciplines of biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (professional societies in the Czech Republic and international relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) KZ 2 Teaching activities in the summer semester are project-based. Z,ZK 4 Anatomy and Physiology I. Anatomy and Physiology II. Z,ZK 4 Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, co	17AVAUBME	Introduction to Biomedical Engineering	Z	2
practice, as well as the possibilities of other professional activities of students. The course also includes a description of the disciplines of biomedical engineering and a demonstration of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (profession) in health care will be described in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. Czech Republic and international relationships and possible applications, including the role of professional societies in the disciplines of biomedical technican (profession) in health care will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. TrabBBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices.	The main goal of th	e course is to implement an introduction to the field of study, including the relationship between the content of biomedical engineering, t	he study plan, the r	equirements
of selected relevant instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical technician (profession) in health care will be described in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) KZ 2 Teaching activities in the summer semester are project-based. KZ 2 F7ABBAF2 Anatomy and Physiology I. Z,ZK 4 Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. Z,ZK 4 Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4 Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4	of Czech legisla	tion and clinical practice. The partial goals are motivation for the non-medical health profession, a description of the content of studie	s and controlled pr	ofessional
will be described in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of professional societies in the Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) KZ 2 Teaching activities in the summer semester are project-based. KZ 2 F7ABBAF1 Anatomy and Physiology I. Z,ZK 4 Anatomy and physiology I covers functional aspects of particular organs and their systems. Z,ZK 4 Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4 Algorithm, data structures. Identifiers, data types, assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, measuring algorithm quality. Abstract data	practice, as well as	s the possibilities of other professional activities of students. The course also includes a description of the disciplines of biomedical er	gineering and a de	monstration
Czech Republic. From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topics of exercises are mentioned. F7ABBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) KZ 2 Teaching activities in the summer semester are project-based. Teaching activities in the summer semester are project-based. Z,ZK 4 F7ABBAF1 Anatomy and Physiology I. Z,ZK 4 Anatomy and physiology I. Covers functional aspects of particular organs and their systems. Tracking activities on the subject covers functional aspects of particular organs and their systems. T F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structure of programming techniques and basic algorithms in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Prac	of selected relevan	nt instrumentation, including a simulated ICU and artificial patients. At the end of the course, the specific role of the biomedical techni	cian (profession) in	health care
F7ABBA3A English Language IIIA (part 1) KZ 2 The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) KZ 2 Teaching activities in the summer semester are project-based. XZ,ZK 4 F7ABBAF1 Anatomy and Physiology I. Z,ZK 4 Anatomy and physiology I covers functional aspects of particular organs and their systems. XZ 4 F7ABBAF2 Anatomy and Physiology I. Z,ZK 4 Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4 F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeratior systems. Introduction to structured programming in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data: types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmer view. Introduction to struct ure of software engineering<	will be described	in connection with the legislation of the Czech Republic and international relationships and possible applications, including the role of	of professional soci	eties in the
The aim of the course is to increase students' language competence in academic English and professional vocabulary, along with common communication skills. Students should be able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) Teaching activities in the summer semester are project-based. KZ 2 F7ABBAF1 Anatomy and Physiology I. Anatomy and physiology I covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBAF2 Anatomy and Physiology II. Anatomy and Physiology I. Anatomy and Physiology I. Anatomy and Physiology II. Z,ZK 4 F7ABBAF2 Anatomy and Physiology I. Anatomy and Physiology I. Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4 F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, corditional statement, cortain of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing -	Czech Republic.	From the organizational point of view, the subject will be taught after 2 hours and for that reason only 7 topics of lectures and 7 topic	s of exercises are r	nentioned.
able to work actively with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and the associated syntactic and lexical devices. F7ABBA3B English Language IIIB (part 2) Teaching activities in the summer semester are project-based. KZ 2 F7ABBAF1 Anatomy and Physiology I. Anatomy and physiology I covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBAF2 Anatomy and Physiology I. Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBALP Algorithmic and Programming Theory Systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. Z,ZK 4 F7ABBBB Biomechanics and Biomaterials Z,ZK 4	F7ABBA3A	English Language IIIA (part 1)	KZ	2
Interview Interview <thinterview< th=""> <thinterview< th=""> <thinterview< th=""></thinterview<></thinterview<></thinterview<>	The aim of the co	urse is to increase students' language competence in academic English and professional vocabulary, along with common communic	ation skills. Student	s should be
F7ABBA3B English Language IIIB (part 2) Teaching activities in the summer semester are project-based. KZ 2 F7ABBAF1 Anatomy and Physiology I. Anatomy and physiology I covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBAF2 Anatomy and Physiology II. Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBALP Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. Z 4 Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.	able to work acti	vely with academic text, understand and be able to use basic terminology and be aware of the different stylistic levels of English and	the associated syn	tactic and
Teaching activities in the summer semester are project-based. F7ABBAF1 Anatomy and Physiology I. Anatomy and physiology I covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBAF2 Anatomy and Physiology II. Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBAF2 Anatomy and Physiology II. The subject covers functional aspects of particular organs and their systems. Z,ZK 4 Rogorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems. Z,ZK 4		lexical devices.		
Teaching activities in the summer semester are project-based. F7ABBAF1 Anatomy and Physiology I. Anatomy and physiology I covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBAF2 Anatomy and Physiology II. Anatomy and physiology I. The subject covers functional aspects of particular organs and their systems. Z,ZK 4 F7ABBALP Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems. Z,ZK 4	F7ABBA3B	English Language IIIB (part 2)	KZ	2
Anatomy and physiology I covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy and physiology II links to Anatomy and Physiology II. The subject covers functional aspects of particular organs and their systems. F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering F7ABBBB Biomechanics and Biomaterials Z,ZK 4			1	I
Anatomy and physiology I covers functional aspects of particular organs and their systems. F7ABBAF2 Anatomy and physiology II links to Anatomy and Physiology II. The subject covers functional aspects of particular organs and their systems. F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Biomechanics and Biomaterials Z,ZK 4	F7ABBAF1	Anatomy and Physiology I	7 7K	4
F7ABBAF2 Anatomy and Physiology II. Z,ZK 4 Anatomy and physiology II links to Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. 4 F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.		, , , ,	_,_,`	•
Anatomy and physiology II links to Anatomy and Physiology I. The subject covers functional aspects of particular organs and their systems. F7ABBALP Algorithmic and Programming Theory KZ 4 Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.	F7ABBAF2		7 7K	1
F7ABBALPAlgorithmic and Programming TheoryKZ4Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data- types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering.F7ABBBBZ,ZK4The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.A			1 '	
Algorithm, data structures. Identifiers, data types. assignment statement, conditional statement, cycles. Arithmetical and logical operations. Digital representation of numbers, numeration systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.			-	1
systems. Introduction to structured programming in C language - building and structure of simple programs, creating of the user functions, user input and output, file management, memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data-types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.			1	
memory management. Practical overview of programming techniques and basic algorithms in C language. Recursive and iterative methods, measuring algorithm quality. Abstract data- types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering. F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.	•			
types, data sorting and searching, implementation of basic numerical algorithms. Introduction to biomedical data processing - programmers view. Introduction to software engineering F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.	-		-	-
F7ABBBB Biomechanics and Biomaterials Z,ZK 4 The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.				
The course is intended for all students who need to supplement their knowledge and have a general knowledge about biomechanics and its application in specific practical problems.			1	
			1 '	
The content is crosen to be sufficient to understand athe issues in related subjects, especially the subject of Mechanics and Robotics in Medicine. If the student does not choose the			• •	
	The content is cho	user to be summern to understand athe issues in related subjects, especially the subject of Mechanics and Robotics in Medicine. If the	e sludent does not	choose the

subject and has never had the opportunity to complete these basic knowledge, they will be exposed to the risk of misunderstanding the subsequent issues in related subjects. in which

	this is not taken into account the basic knowledge.		
F7ABBBCH	Biochemistry	Z,ZK	2
Course participants	s will be introduced to the basics of Biochemistry. The course builds on the knowledge gained in general chemistry and extends this k	nowledge about th	e chemistry
of living systems.	The interpretation goes through the basic building structures of biological systems (amino acids, peptides, proteins, lipids, carbohydra	ates, nucleic acids)	, biological
	molecular genetics to the most important metabolic processes. Particular attention is paid to the aspects necessary for understanding	-	
	nical laboratory, which are part of the follow-up chemical discipline. The laboratories are focused on broadening the topics discussed in		· ·
	on the determination of biomolecules and the verification of their properties. Students should become familiar with the basic laborato		-
F7ABBBFT	Biophotonics	KZ	2
	ciples and applications in the interdisciplinary sphere, connecting physics, optics and biology. Interaction of laser radiation with matter		
lissue, biology basi	cs, photobiology, bioimaging, basics of lasers, laser safety, optical biosensors, photodynamical therapy, optical manipulation with cells, na biomaterials for photonics.	inotechnology for bi	opnotonics,
F7ABBBLG	Biology	Z,ZK	4
	about the cellular level of organisms - from acelullar through prokaryotic to eukaryotic. The viruses. Prokaryotic cells. Bacteria. Bacter	I ' I	
	ant and animal cell structure and function. Structure and conformation of biopolymers (nucleid acids and proteins). The nucleus, plas		
-	system: endoplasmic reticulum, the Golgi apparatus, lysosomes, vacuoles. Semiautonomic organelles: mitochondria, sites of respirat		
photosynthesis. The	e origin of eukaryotes: endosymbiotic hypothesis. Ribosomes. The cytoskeleton: microtubules, microfilaments. The cell cycle: mitotic (M) phase and inter	phase (G1,
S and G2 phases).	The division of cell nucleus - amitosis, mitosis, phases of mitosis, the mitotic spindle; meiosis. The cell division - cytokinesis. Cell different	entiation. Cell death	n. Apoptosis
and necrosis. Menc	lelian and modern genetics: structure, function and inheritance of genes. Includes the chemistry and structure of chromatin and chromos	somes. Animal tissu	ie histology.
	Animal cells and tissues. Human genetics. Chromosomal aberrations, genetic disorders and diseases. Genetic engineering. GMO o	-	
F7ABBBLS	Biological Signals	Z,ZK	4
-	with origins and description of the most important electric and non-electric biological signals. The principles of generation, recording an		
•	The studied signals involve native and evoked biosignals, including biological signals of the heart, brain, muscles, nervous system, au		
signals from the gas	stro-intestinal system etc. Advanced methods of digital biosignal processing, spectrum analysis, modern methods of artificial intelligence	, features extraction	n, automatic
	classification, graphic presentation of results. Adaptive segmentation, artificial neural networks for signal processing.	771/	4
F7ABBCHM	Chemistry	Z,ZK	4
Introduction to c	chemistry, categorization and properties of substances, chemical bonds, chemical reactions, elements in periodic table, organic chem substances, polymers, analytical methods - instrumental analysis, chemical calculations, chemical equations	listry fundamentals	, naturai
		ZK	2
F7ABBEBI	Ethics in Biomedical Engineering ic ethical concepts and theories in the context of applied ethics with respect to the professional orientation, maintenance, and developm	I I	
	Prerequisites and co-requisites: Knowledge of humanities in the scope of secondary school studies (basics of philosophy, history, psy		
	I competencies: Knowledge of basic concepts and controversial topics in theoretical and applied ethics, the ability to critically think, di		- 1
	own views in ethical dilemma situations, developing the ability to work with literature, enhance empathy skills.	oodoo, alguo alla e	
F7ABBELF	Electrophysiology	Z,ZK	2
	introduce students to the theory of electrical phenomena at the cell, organ and organism level, to the possibilities of measuring and i	I ' I	
-	o enable students to experimentally verify the knowledge. This course builds on Anatomy and Physiology I and II and requires a basi	-	
(anatomy) and fu	nction (physiology) of the following systems (excitable tissues): nervous, musculoskeletal, circulatory (especially the heart). The course	se deals with the pr	oblems of
excitable tissues (nervous, The course deals with the physiology of nervous tissue, muscle and glandular tissue and provides knowledge of the physiol	ogy of electrical pro	ocesses at
	different levels: cell, tissue, organ, organism.		
F7ABBEM	Electrical Measurements	Z,ZK	4
-	tric values, principles, using, and parameters. Analogue measuring converters. Electromechanical measuring devices. Current and po	-	
•	asuring. Electric work and electric power measuring: direct current, single-phase and three-phase current. Electrical resistance and im		~ ~
	gue scope. Digitalization, digital signal processing, signal reconstruction. Electronic measuring devices: multimeter, digital scope. Opto		-
F7ABBEMP	Electromagnetic Fields of Living Organisms	KZ	2
-	atic electric and magnetic fields, electromagnetic fields. Electrical and magnetic properties of biological tissues. Electrical, magnetic a	-	
	omical and physiological bases of bioelectromagnetism. Bioelectric sources and conductive environment. Integral relations of electroc pects of mathematical modeling of electrocardiography and electroencephalography. Topographic concept of bioelectrical and biomag		
electrodynamic as	and techniques of measurement. Human-robotic limb replacement interface.	neue measuremen	13. INIETIOUS
F7ABBEO	Electronic Circuits	Z,ZK	4
	les a basic orientation in the principles of electronic circuits used in electronic laboratory and medical devices. It provides a prerequis		
	digital instrumentation. technology. Course entry requirements: Successful completion of Theoretical Electrical Engineering. Exit Know		
-	Students will become familiar with functional electronic blocks that are used in the design of laboratory and medical instruments. The	-	
·	competently assess the basic properties and parameters of electronic devices.		
F7ABBESP	Management of Health Care Technology	Z,ZK	2
F7ABBFCH	Physical Chemistry	Z,ZK	4
	mical properties of substances. Basic calculations. Principles and behavior of systems of gases and liquids. Chemical bonds. Proper		
	ostances. Phase equilibria, multiface systems. Behavior and properties of vapors, evaporation. Electrochemical potential, electrodes.		
kind. Referent and	indication electrodes, electrodes for EKG, EEG, EMG etc. Redox potential. Inert electrodes. Membranes - types, properties and appli	cations. Osmotic p	ressure. Ion
selective electrode	s. Acidity and basicity of solutions, pH. pH measurement. Stability of materials, corrosion. Passivation and self-passivation. Electrolysi	s and conductivity	of solutions
	ents. Polarography. Further methods of analysis of gases and solutions in BME (Biomedical Engineering.) Optical absorption. Spectro		
phosphorescence.	Sensors for measuring of pH, pO2, pCO2, and SaO2 working on the basis of fibre optic cables and absorption or fluorescence. Adva	-	vices. Mass
	spectroscopy, nuclear magnetic resonance, flame spectroscopy. Thermodynamics of reaction systems, basic calculations.		
F7ABBFVP	Multivariable Calculus	KZ	2
F7ABBFY1	Physics I.	Z,ZK	4
Course Physics 1 is	s used to repeat and expand the basic knowledge of physics in the field of classical mechanics, thermals and optics, which is needed f	-	BME CTU.
	Students will gain theoretical knowledge, the ability to solve numerical problems and practical skills associated with working in labor		
F7ABBFY2	Physics II.	Z,ZK	6
The course Physics	s 2 follows the course Physics 1 and expands the acquired knowledge in the field of electromagnetism and the basics of atomic and n	uclear physics and	condensed

matter physics.

F7ABBHE	Hygiene and Epidemiology	ZK	1		
Students should I	earn theoretical basics of Epidemiology and Hygiene disciplines in depth covered by lecture topics. As result of this subject, student s		ith targets		
and working methods used in all disciplines of infectious and non-infectious epidemiology, environmental epidemiology and in solving of priorities and problems of Public Health					
Protection. Outcoming knowledge, skills, abilities and competences: Knowledge of basic methods used in preventive medical disciplines and legislation.					
F7ABBISZ	Information Systems in Health Care	Z,ZK	4		
Lectures are orie	nted on medical informatics definition and basic characteristic of the different specialized areas. The relations between IS and health	care structure, fina	ncing and		
-	alyzed as well. Some basic information technology, HW and SW tools are described in relation to IS design. A special attention is paid		-		
interpretation, d	ata and communication standards. Different types and features of clinical and hospital IS, decision support systems and regional healt	th care IS are anal	yzed and		
	discussed. Methodology of IS development, implementation and support are presented as well.				
F7ABBITP	Integral Calculus	Z,ZK	. 4		
-	ntroduction to integral calculus and integral transforms. Integral calculus: anti-derivative, indefinite integral, properties and methods of ir n, partial fractions), definite integral, properties, Newton-Leibnitz fundamental theorem, simple applications of both indefinite and defini				
	I equations (ODEs) (1st order ODEs with separable variables, linear 1st order homogenous as well as non-homogenous ODEs, 2nd c				
-	ODEs with constant coefficients), intro to multiple integrals, particularly double integral and applications. Integral transforms: Laplace to	-			
	transform and their application for solving nth order linear ODEs with constant coefficients.				
F7ABBKT	Communication Technology	Z,ZK	2		
The aim of the cou	rise is to teach the student to understand the basic principles of the function of personal computers, their peripherals and communication	on interfaces. They	will be able		
to c	onfigure the network interface and configure and connect a peripheral type of a standard medical devices equipped with a wired or wir	reless interface.			
F7ABBKZS	Conventional Imaging Systems	Z,ZK	4		
-	radiation spectrum and relationship to the modalities of medical diagnostic imaging systems. Fundamentals of imaging theory. Application				
	maging systems. Optical imaging systems including microscopic. Television imaging systems (including video endoscopic imaging sys		-		
	ethods. Infrared imaging systems (thermal imaging/IR imaging systems). X-ray imaging systems. Gamma imaging systems. Lectures a students with an averaging system and mathed.				
	students with an overview of the principles of image formation in medicine for conventional imaging systems and methods. There are ization and subsequent processing and principles of function and properties of sensing image devices in context, which is especially rele		-		
0, 0	e whole course and study specialization. Knowledge, skills and competences: The student is able to explain the basic physical principle		, ,		
	ncluding the principle of image formation. The student is able to assess, on the basis of standard definition of technical parameters that	•			
-	ments for selected modality. Such knowledge is a prerequisite to the correct process technology selection and application of the moda				
	necessary to ensure the required quality of the resulting image data.				
F7ABBLAD	Linear Algebra and Differential Calculus	Z,ZK	6		
	troduction to differential calculus and linear algebra. Differential calculus - sets of numbers, sequences of real numbers, real functions				
continuity and der	ivative of a function investigation of function behavior), Taylor's formula, real number series. Linear algebra - vector spaces, matrices a	and determinants,	systems of		
	linear algebraic equations (solvability and solution), eigenvalues and eigenvectors of matrices, applications.				
F7ABBLPZ1	Medical Devices and Equipment I. (Diagnostic Devices)	Z,ZK	4		
	categories. Electrical safety of medical devices. Biopotentials amplifiers. Electrocardiographs, electromyographs and electroencephalo diac output measurement. Blood pressure measurement. Cardiac frequency measurement. Phonocardiography. Pulse oximetry. Medic				
	and electrosurgery medical devices. Therapeutic medical devices. Implantable medical devices. Telemetry. Medical devices for au		Sumulation		
F7ABBLPZ2	Medical Devices and Equipment II. (Therapeutical Devices)	Z,ZK	2		
	ategories. The electrical safety of therapeutical medical devices. Artificial ventilation, introduction. Conventional ventilation. High-frequentiation at the same set of the	·	racorporeal		
membrane oxygei	nation. Hemodialysis. Drug infusion pumps (volumetric, syringe). Artificial cardiac pacemaker. Defibrillators (external, implantable). Coc	chlear implant. Ele	ctrosurgery		
	units. Therapeutic ultrasound. Electro-therapy. Magneto-therapy.				
F7ABBLT	Clinical Laboratory Instrumentation	Z,ZK	4		
	bry instrumentation introduces principles of bioanalytical methods used in clinical diagnostics. Emphasis is put on optical methods (UV		-		
	AS, AES, fluorimetry), NMR and X-ray analysis, electrochemical and electromigration methods (ion electrodes, biosensors, electropho genetic methods (ELISA, PCR) as well as on chromatography and mass spectrometry. Contribution of lab automation to clinical diagr				
infunioassays anu	During the laboratory course students will be introduced into the basics of work in bioanalytical laboratory and lab data process		uiscusseu.		
F7ABBMAT					
	Marketing of Medical Jechnology	-	2		
	Marketing of Medical Technology	KZ	2 cases are		
Marketing funda	Marketing of Medical Technology mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care tec ented including health care technology companies from the Czech Republic. Discussion and analysis of the real products are included	KZ chnology. Practical			
Marketing fundar prese	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care tec	KZ chnology. Practical			
Marketing fundar prese F7ABBMAZ	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included	KZ chnology. Practical in the exercises. KZ	cases are		
Marketing fundar prese F7ABBMAZ	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care	KZ chnology. Practical in the exercises. KZ	cases are		
Marketing fundan prese F7ABBMAZ Getting to know F7ABBMDT	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical w interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ	cases are 1 cessary 2		
Marketing fundan prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical w interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics and therapy. Numerical methods suitable for modeling these interactions. B	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave	cases are 1 cessary 2 e imaging		
Marketing fundan prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ assics of microwave etection and classi	cases are 1 cessary 2 e imaging fication of		
Marketing fundan prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ assics of microwave etection and classi	cases are 1 cessary 2 e imaging fication of		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave desvents and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators.	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm	2 e imaging fication of ent. Design		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators. Mechanics	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm Z,ZK	cases are 1 cessary 2 e imaging fication of ient. Design 4		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave desvents and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators.	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom	cases are 1 cessary 2 e imaging fication of leent. Design 4 uposition,		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r	cases are 1 cessary 2 e imaging fication of leent. Design 4 uposition, estrictions,		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular e F7ABBMEC Students will ge replacement. Equ spatial and planar	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more illibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ	cases are 1 cessary 2 e imaging fication of ication of ient. Design 4 uposition, estrictions, ict moment,		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more illibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - test of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - test	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ of inertia. Internal s sts of mechanical p	a imaging fication of e imaging fication of ent. Design 4 aposition, estrictions, ict moment, tatic effects properties,		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular e F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more fillbrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse co of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - test leformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-se	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ sasics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ- of inertia. Internal s sts of mechanical p section design, thir	a imaging icasion of e imaging ification of ent. Design 4 aposition, estrictions, ict moment, tatic effects properties, i-walled		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, cor	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care with estructure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermi and testing of applicators. Mechanics tacquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more ilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined is conservation of momentum. Second moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of f plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - tes heined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardness, adh	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ chasics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ- of inertia. Internal s sts of mechanical p section design, thir nesion, toughness,	2 e imaging fication of uent. Design 4 uposition, estrictions, act moment, tatic effects properties, u-walled tribological.		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, cor F7ABBMFJ	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical w interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy a EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hypertherm and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and morr ilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined conservation of momentum. Second moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of f plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - test leformations, Hooke's law. Stress and strian - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross- nbined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardness, add Physical Phenomena Modeling in COMSOL MULTIPHYSICS	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ Basics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ- of inertia. Internal s sts of mechanical p section design, thir nesion, toughness, KZ	2 e imaging fication of uent. Design 4 uposition, estrictions, act moment, tatic effects properties, u-walled tribological. 2		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, cor F7ABBMFJ Numerical simula	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy a EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hypertherm and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more illibrium of a force system in a plane and space - equation of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse t efformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross- mined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardness, adf Physical Phenomena Modeling in COMSOL MULTIPHYSICS	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ Basics of microwave etection and classi ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ of inertia. Internal s sts of mechanical p section design, thir nesion, toughness, KZ ice the number of p	2 e imaging fication of uent. Design 4 uposition, estrictions, act moment, tatic effects properties, u-walled tribological. 2 prototypes		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, cor F7ABBMFJ Numerical simula needed and thus s	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical w interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy a EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hypertherm and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and morr ilibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined conservation of momentum. Second moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of f plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - test leformations, Hooke's law. Stress and strian - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross- nbined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardness, add Physical Phenomena Modeling in COMSOL MULTIPHYSICS	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ asics of microwave etection and classif ia. Planning treatm Z,ZK nent effect - decom systems - motion r ional motion, produ of inertia. Internal s section design, thir nesion, toughness, KZ ice the number of p icult to verify ongo	a imaging ication of ication of		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, con F7ABBMFJ Numerical simula needed and thus s processes (eg, he	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care w the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy E EM field with biological tissues and its use in diagnostics and therapy. Numerical methods suitable for modeling these interactions. B ive application of microwave techniques in medical diagnostics: non-invasive monitoring of blood glucose concentration, microwave de events and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hypertherm and testing of applicators. Mechanics t acquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more filibrium of a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined for plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - tes formations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, consi- mbined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of orces section. Tests of hardness, adf Physical Phenomena Modeling in COMSOL MULTIPHYSICS tions are increasingly being used to develop new and optimize existing products and devices. Numerical simulations can greatly redu usignificantly accelerate and reduce development costs. Another sector where numerical simulations are used is a sector where it is diff	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ asics of microwave etection and classif ia. Planning treatm Z,ZK nent effect - decorr systems - motion r ional motion, produ of inertia. Internal s section design, thir nesion, toughness, KZ ice the number of p icult to verify ongo an treatment where	a imaging ication of ication of		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and c cross-sections, con F7ABBMFJ Numerical simula needed and thus s processes (eg, he knowledge of mate	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care with estructure of the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy e EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave deevents and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hyperthermical methods suitable for modeling these interactions. B is a paper and testing of applicators. Mechanics tacquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more illibrium of a force system in a plane and space - equation of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical proprieties of materials - test formations, Hook's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-ations, Hook's law. Stress and strain - uniaxial and optimize existing products and devices. Numerical simulations can greatly reduignificantly accelerate and reduce development costs. Another sector where numerical simulations are used is a sector where it is difficating accelerate and reduce develo	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ conception and classi- ia. Planning treatm Z,ZK nent effect - decom- systems - motion r ional motion, produ- of inertia. Internal s sts of mechanical p section design, thir nesion, toughness, KZ ice the number of p icult to verify ongo an treatment where). Computer model	a imaging fication of ent. Design 4 position, estrictions, act moment, tatic effects properties, n-walled tribological. 2 porototypes ing physical , based on ing involves		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, con F7ABBMFJ Numerical simula needed and thus s processes (eg, he knowledge of mate the creation of geo area and the prov	mentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care withe structure of the health sector and financing models Health. Zoom administrative management issues various types of medical with the structure of the health sector and financing models Health. Zoom administrative management issues various types of medical with interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy a EM field with biological tissues and its use in diagnostics and therapy. Numerical methods suitable for modeling these interactions. B ive application of microwave techniques in medical diagnostics: non-invasive monitoring of blood glucose concentration, microwave deevents and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hypertherming and testing of applicators. Mechanics to a force system in a plane and space - equation of equilibrium, systems into equilibrium. Reactions on statically determined is constraints, solution of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotati conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - tes eleformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-embined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation for cross section. Tests of hardness, adf prostical ty secierate and reduce develop new and optimize existing products and	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ asics of microwave etection and classi- ia. Planning treatm Z,ZK nent effect - decorr systems - motion r ional motion, produ- of inertia. Internal s section design, thir nesion, toughness, KZ ice the number of p icult to verify ongo an treatment where). Computer model discretization of the dependent on the	a imaging fication of ent. Design 4 position, estrictions, act moment, tatic effects properties, n-walled tribological. 2 porototypes ing physical , based on ing involves e computing numerical		
Marketing fundau prese F7ABBMAZ Getting to know F7ABBMDT Interaction of the (MWI). Perspect cerebral vascular of F7ABBMEC Students will ge replacement. Equ spatial and planar momentum, law of - beam, system of stresses and of cross-sections, con F7ABBMFJ Numerical simula needed and thus s processes (eg, he knowledge of mate the creation of geo area and the prov	nentals, products management, basic knowledge concerning export activities in the field of marketing and commercial health care technology companies from the Czech Republic. Discussion and analysis of the real products are included Management and Admininistration in Health Care Methods are included Management and Admininistration in Health Care Methods are included to the health sector and financing models Health. Zoom administrative management issues various types of medical we interconnection. Orientation in the specific features of health facilities and European systems of health care workplaces. Microwave Diagnostics and Therapy a EM field with biological tissues and its use in diagnostics: non-invasive monitoring of blood glucose concentration, microwave devents and early detection of breast cancer. Therapeutic systems and applicators for microwave and RF local and regional hypertherm and testing of applicators. Mechanics tacquainted with the following areas of mechanics: General physical equations, Newton's laws, statics and dynamics. Force and more illibrium of a force system in a plane and space - equation of gravity and center of area. Spatial moment of inertia - kinetic energy of rotatic conservation of reactions. Static moment, center of gravity and center of area. Spatial moment of inertia - kinetic energy of rotatic conservation of momentum. Second moment of area - product moment, polar moment, Mohr circle, main moments of inertia, ellipse of plates, course of internal static effects, kinematic method, statically indeterminate problems. Mechanical properties of materials - test eleformations, Hooke's law. Stress and strain - uniaxial and biaxial stress state, simple bending, bending curve, torsional stress, cross-combined stress, nonlinear models. Buckling strength - critical load, stability of members, calculation of cross section. Tests of hardness, adf physical properties and boundary conditions and, last but not least, based on numerical simulations, we can plate and reduce develop meet and spr	KZ chnology. Practical in the exercises. KZ orkplaces, their ne KZ asics of microwave etection and classi- ia. Planning treatm Z,ZK nent effect - decorr systems - motion r ional motion, produ- of inertia. Internal s section design, thir nesion, toughness, KZ ice the number of p icult to verify ongo an treatment where). Computer model discretization of the dependent on the	a imaging fication of ent. Design 4 position, estrictions, act moment, tatic effects properties, n-walled tribological. 2 porototypes ing physical , based on ing involves e computing numerical		

F7ABBMS	Modelling and Simulation	Z,ZK	4
	Aims and consequences of modeling and simulation. The methodology of modeling and simulation. Inverse problem. Proposal for a r		
experiment. Cor	npartmental models. Physiological models. Pharmacokinetics. Continuous and discrete models of population dynamics. Epidemiologic	cal models. Veneral	disease
	models.	7	
F7ABBMT	Medical Terminology nade acquainted with particular terms flowing from latin but also greek expressions during their lectures. Students are continuously inf	Z	1 of wholo
Allendants are n	diagnosis and therapeutical procedures. Education is combined with continuous knowlegde check up through the use of tes		or whole
F7ABBMTB	Microprocessors in Biomedicine	KZ	2
	ain the principles and building blocks of a microprocessor system, the structure of a microprocessor, the connection of basic periphera	1	
a microcomputer s	ystem in the form of a practically oriented explanation and demonstration tasks. Provide a basic overview of ATMega and ARM Cortex	M architectures with	h practical
	programming with examples of use in biomedicine. Prerequisites and co-requisites: basic knowledge of digital technology and signal		
	e, skills, abilities and competencies: The student is familiar with the selection and design of microprocessor system solutions for use in		۲ ۱
-	d program control of these building blocks of the microprocessor system: digital inputs and outputs, A / D and D / A converters, serial rs, interrupt controller. Understands the basics of communication of microcomputers with the environment: interfaces for LCD displays	-	
	WIFI, Bluetooth, XBee and mobile 3G / 4G communication, GPS / GLONAS localization.	, Reyboards, Rozoz	, Luieniei,
F7ABBMVP	Research Methodology	KZ	2
	duces students to the basic methods of research work and the requirements for scientific communication. The course also introduces		- 1
	writing and presenting of bachelor's thesis.		
F7ABBNMP	Project Proposal and Management	KZ	2
	tures, students will become familiar with topics such as project management (PM) according to IPMA, the certification process, project		
	fe cycle, as well as project initiation. They will learn about the feasibility study, project initiation, project identification document, and log	-	-
	uction to project planning, scheduling, risk and risk analysis, project implementation, behavioral competencies in PM, project closure, insights from a hospital environment. During the exercises, students will master the following concepts and topics and develop relevan		
	a document, logical framework, WBS (Work Breakdown Structure a hierarchical structure of tasks or activities), scheduling, risk analysi	-	
-	art of this course, students have the opportunity to obtain the IPMA Level D certification, which is intended for aspiring project manage		
	team members. The certification is valid for five years.		
F7ABBOIZ	Protection Against Ionizing Radiation	ZK	2
	urse is to give students an overview of the issues of protection against ionizing radiation and dosimetry in general and in a specialized		
	ties of basic types of ionizing radiation, sources of ionizing radiation, interaction of gamma radiation with matter, interaction of charge		-
	passage through the matter, units used in dosimetry and radiation protection, operational units for working and environment monitoring elding of simple sources. Special attention is paid to the exposure control of workers, residents and patients. In course students will give	-	
	osage limits. Entry requirements of the course: Structure of matter, basic types of nuclear transformations. Properties of basic types of		
	Interaction of gamma radiation with matter, interaction of charged particles with matter, passage of photon and electron beams throug	-	
radiation. Output k	nowledge, skills, abilities and competences: Units used in dosimetry and radiation protection. Principles and goals of radiation protection	n. Basic principles of	protection
against external	ionizing radiation and protection against internal contamination. Dose limitation system, ionizing radiation in legislation of Czech Repu	blic. Ionizing radiati	on use in
	healthcare.		
F7ABBPMS	Probability and Mathematical Statistics		4
-	iliarize students with the basic principles of the theory of probability and mathematical statistics. Pre-requisites and entry requirement near algebra, differential and integral calculus) in the range of F7PBBLAD and F7PBBITP courses taught in the first year of study. Kno		- 1
	e student is acquainted with the probabilistic model, basic definitions of Kolmogorov theory of probability and inductive statistics. The student	-	
	ns that arise in other areas of professional work and can explain them sufficiently (e.g. doctors). The student is familiar with the basic		
	and can choose a suitable method for standard statistical problems.		
F7ABBPNK	U U U U U U U U U U U U U U U U U U U	KZ	4
	actically oriented course is to acquaint students with the design process of the measuring part of the device, ie basic problem analysi		
	lesign, selection of suitable components and their values with emphasis on working with catalog sheets and application recommendat d board design. printed circuit board, its mounting, soldering and revitalization. During the course, students will implement a functiona		
	ic thermometer, which will consist of two functional units - analog part for temperature measurement and signal conditioning (equipped)		-
	th diode bargraph (equipped with SMT components). For both products, students will implement the design of the diagram and PCB in		
	nalog part of the device, an application for digitizing data from the analog device using NI-DAQ cards and a cheap solution with the help of	-	ented.
	he last part will be a service intervention in the device (monitor of vital functions) with emphasis on safe handling and measurement of		
F7ABBPP	First Aid	KZ	2
-	a brief overview of the main principles and procedures of providing emergency first aid with special attention to the procedures for fail ening situations. The subject also includes situations of mass casualty of victims in crisis situations and emergencies, including the ph		
F7ABBPPM1		KZ	1
	burse is to acquaint students with the Matlab environment and language. Students will learn how to create functions and scripts in Ma	114	
		tlab language, thev	
	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlak		
F7ABBPPM2	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat		2
F7ABBPPM2	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat	KZ	
F7ABBPPM2 During the course	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic in n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual	NI. KZ	se requires
F7ABBPPM2 During the course Matlab basics from	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces.	II. KZ	se requires work with
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools	o II. KZ oolboxes. The cours ize data and how to KZ	se requires work with 2
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, F	o II. KZ oolboxes. The cours ize data and how to KZ	se requires work with 2
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP Introduction to so	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, F languages (Python, R, Java, CSS, bash).	b II. KZ oolboxes. The cours ize data and how to KZ 'owerpoint) and pro-	e requires work with 2 gramming
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP Introduction to so	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, F	b II. KZ oolboxes. The cours ize data and how to KZ bowerpoint) and pro- Z,ZK	se requires work with 2 gramming 2
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP Introduction to so F7ABBPPS Patient and instru	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, P languages (Python, R, Java, CSS, bash). Patient and Device Simulators and Testers	KZ oolboxes. The cours ize data and how to KZ 'owerpoint) and pro Z,ZK ntation of a selected	e requires work with 2 gramming 2 I model of
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP Introduction to so F7ABBPPS Patient and instru a subsystem. Desi and other relate	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, P languages (Python, R, Java, CSS, bash) . Patient and Device Simulators and Testers ment simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implement gn and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers. Possibilitie d procedures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilitie	KZ oolboxes. The cours ize data and how to KZ 'owerpoint) and product Z,ZK intation of a selected invironment, scenaries so fuse in clinical products	2 gramming 2 I model of io creation practice.
F7ABBPPM2 During the course Matlab basics fror F7ABBPPP Introduction to so F7ABBPPS Patient and instru a subsystem. Desi and other relate	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, P languages (Python, R, Java, CSS, bash) . Patient and Device Simulators and Testers ment simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implement gn and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers. Boxic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilitie stration. Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simulation	KZ oolboxes. The cours ize data and how to KZ 'owerpoint) and product Z,ZK intation of a selected invironment, scenaries so fuse in clinical products	2 gramming 2 I model of io creation practice.
F7ABBPPM2 During the course Matlab basics from F7ABBPPP Introduction to so F7ABBPPS Patient and instru a subsystem. Desi and other relate Practical demons	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, P languages (Python, R, Java, CSS, bash) . Patient and Device Simulators and Testers ment simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implement gn and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers. Bosic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilitie stration. Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simulatio creation of new scenarios. Collaboration between HPS and anaesthesia machine.	KZ oolboxes. The cours ize data and how to KZ 'owerpoint) and product Z,ZK intation of a selected invironment, scenaries so f use in clinical µ n scenario, scenarie	2 gramming 2 I model of io creation oractice. o testing,
F7ABBPPM2 During the course Matlab basics from F7ABBPPP Introduction to so F7ABBPPS Patient and instru a subsystem. Desi and other relate Practical demons	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, P languages (Python, R, Java, CSS, bash) . Patient and Device Simulators and Testers ment simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implement gn and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers. B d procedures in manikin control, basic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilitie stration. Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simulatio creation of new scenarios. Collaboration between HPS and anaesthesia machine. Psychology	KZ oolboxes. The course ize data and how to KZ 'owerpoint) and process Z,ZK Intation of a selected invironment, scenaries of use in clinical process n scenario, scenaries KZ	2 gramming 2 I model of io creation oractice. o testing, 2
F7ABBPPM2 During the course Matlab basics from F7ABBPPP Introduction to so F7ABBPPS Patient and instru a subsystem. Desi and other relate Practical demons F7ABBPSL Development, met	about data structures and work with data and their vizualization. The course is followed by the course Programming in Matlat Programming in Matlab II. the students will consolidate and widen their previous knowledge with the Matlab environment, programming language and with basic to n course Programming in Matlab I. The students will learn how to create functions and scripts in Matlab, how to manipulate and visual the basic toolboxes. As well the students will learn to create basic user interfaces. Programming Tools ftware tools on MS Windows platform and GNU/Linux platform. Short introduction of several software tools (MS Word, Excel, LateX, P languages (Python, R, Java, CSS, bash) . Patient and Device Simulators and Testers ment simulators and testers. Basic principles of implementation, connections with other disciplines. Detailed description and implement gn and implementation of patient and instrument simulator sub-blocks. Examples of circuit implementations of simulators and testers. Bosic concepts and principles of anesthesiology. Other types of simulators and phantoms. Possibilitie stration. Connection of the simulator with other medical equipment. Simulators and testers. Implementation of an established simulatio creation of new scenarios. Collaboration between HPS and anaesthesia machine.	KZ oolboxes. The course ize data and how to KZ 'owerpoint) and process 'owerpoint) and process <	2 gramming 2 I model of io creation oractice. o testing, 2 <i>v</i> elopment.

expression and communication skills. Use of elocution and gestures in personal expression. Verbal and nonverbal communication. Dialogue; types of dialogue, questions during dialogue. Model situations. Communication process as part of economics - components, tools and functions.

	dialogue. Model situations. Communication process as part of economics - components, tools and functions.		
F7ABBPTI	Principles and Practice in Tissue Engineering	KZ	2
F7ABBSEL	Power Engineering	Z,ZK	5
	ectronics, power supplies, including electrochemical sources, rectifiers, stabilizers, the most commonly used types of motors, basics of		on, types of
electrical systems	and connecting appliances with a focus on medical use. Emphasis is placed primarily on the physical nature of the problem and its u	nderstanding. know	wledge will
	be verified on practical examples and in the laboratory.		
F7ABBSJ	Scripting Languages	KZ	2
The aim of the cour	se is to understand the topic of scripting languages and their applications, to understand their advantages and disadvantages and their	r complementarity	with system
languages. Student	s will become familiar with regular expressions and tools for word processing. The course focuses on the scripting languages within t	he Unix operating	system and
	the scripting languages Python.		
F7ABBSM	Sensors in Medicine	Z,ZK	4
This subject provid	les information about basic electronic devices - sensors, describes their operation principle, basic circuit configuration and application	n. The stress is aid	mainly on
clarifying of basic p	rinciples and practical utilization. Integral part of this course is basic information about sensors of non-electric quantities and their rea	d-out circuits eg. st	train related
sensors (force, pres	ssure, torque, vibration, displacement, acceleration etc.) magnetic field sensors, temperature sensors, chemical sensors, optical sensor	ors and biosensors	. The stress
	is aid on miniaturization, integration		
F7ABBSPR1	Semestral Project I.	KZ	1
The topic of the ser	nester project (SPR1) must be in the field of biomedical engineering and must be related to the study field of the same name Biomed	ical Technician. Th	e topics are
available for the rele	evant academic year in the database projects.fbmi.cvut.cz Note: It is not possible to implement economic-managerial topics, topics ba	ased mainly on the	creation of
research, clean pro	gramming, topics purely in the field of biology, etc. The application must always be part of the work in accordance with the focus of th	e field. The topic n	nust always
be related to tec	hnology (medical devices, or the scope of work of a Biomedical Technician in clinical practice)! Entries that do not fall into the above a	areas will not be a	pproved.
F7ABBSPR2	Semestral Project II.	KZ	4
The main idea is to	start work on a project which can be improved in time and finish as a Bachelor thesis. In the course will be discussed topic as basic co	mmunication and p	resentation
skills, including te	amwork and project management. Creation of presentations and written texts. Typography rules. Types, purpose and requirements of	technical presenta	ations and
technical texts. Wi	riting a commented bibliographic search. The student solves topic (project) from the selection of the PROJECTS database - http://pro	jects.fbmi.cvut.cz I	During the
	term, there are dedicated 2 hours every week for work under teacher supervising.		
F7ABBSPT	Equipment for Anaesthesiology and Resuscitation	Z,ZK	4
	e of the course is to introduce students to the basic equipment of intensive care units (ICU) and anesthesiology and resuscitation der		als. These
are devices to supp	ort vital functions, especially lung ventilation, as well as patient monitors, anesthesia machines and their parts and other equipment.	nother objective of	f the course
is to integrate know	ledge and skills of students from the fields of science (especially physics, chemistry and physiology) and engineering (modeling, circu	it theory, pneumati	c elements,
	etc.) in the analysis of clinical technology and in the design and implementation of functional technical systems.		
F7ABBTEL	Theory of Electrical Engineering	Z.ZK	4
	and AC currents. Electrical curcuits including R, L, C. Power of electric current, thermal effect of electric current. Distribution of electric	,	ection of the
	s. Input resistance and impedance, idle voltage, inner resistance and impedance of the source, mutual loading of the source and elec		
-	es of circuits in time and frequency domain. Transient action in DC circuits, frequency characteristics of the L/C circuit. Electrical curr		
the conductivity, cre	ation of the semiconductor crossing, properties in the forward and reverse direction. Bipolar transistor - transistor effect, basic principle	in elementary circ	uit. Unipolar
transistor. Unipolar	transistors with complementary vodivosti (CMOS). Electromagnetic effects (induction, magnetization, force effect). Electromagnetic v	vave, spreading, in	terference,
electromagnetic co	mpatibility. Soft and hard magnetic materials. Transformers construction and parameters. Magnetic recording and reproduction of sigr	hals. Electromotors	s principles.
F7ABBTZS	Tomographical Imaging Systems	Z,ZK	4
CT systems (bas	sic principle, schematic arrangement system, basic physical principle, developmental generations, basic principles of reconstruction).	Imaging systems i	magnetic
	and SPECT principle. Specialized imaging systems (hybride). Ultrasound imaging systems. Doppler systems. Subject and especially I		-
students with an ins	sight into the principles of creating image data used in medicine, the principle of methods their scanning, digitization and subsequent	processing, on the	principle of
function	n and properties of scanning image means in context, which is important especially in terms of interdisciplinarity of the subject and th	e field as a whole.	
F7ABBUSS	Introduction to Signals and Systems	Z,ZK	4
	dents to basics of theory of signals and systems. To explain main principles on applications from biology and medicine. To become ac		c mutual
	relations in computer laboratories by means of MATLAB.		
F7ABBZLN	Legislation in Health Care and Technical Standards	KZ	2
	m of the course Legislation in Health Care and Technical Standards is to teach students the basic requirements and regulatory obliga	I	
	al devices. During the course, students will learn the basics of legislation process, as well as regulation related to the medical devices,		
		150 WILLI IEGISIALIVE	regulations
rights and obligation	cal trials and the operation of medical devices. Furthermore, students will learn the legal context of providing health care. The aim is t	-	-
ngino and obligatio	cal trials and the operation of medical devices. Furthermore, students will learn the legal context of providing health care. The aim is t ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, bu	o acquaint student	ts with the
		o acquaint student t on acquainting st	ts with the sudents with
the main points a	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, bu	o acquaint student t on acquainting st uisites and co-requ	ts with the rudents with iisites: To
the main points a successfully comp	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, bu and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequ	o acquaint student t on acquainting st uisites and co-requ this area. Output k	ts with the udents with lisites: To nowledge,
the main points a successfully comp skills, abilities and c	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, bu and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse	ts with the udents with lisites: To nowledge,
the main points a successfully comp skills, abilities and c	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, bu and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse	ts with the udents with lisites: To nowledge,
the main points a successfully comp skills, abilities and o F7ABBZOD	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, bu and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in the student should be able problem.	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ	ts with the udents with disites: To nowledge, off in a given 2
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r	Ins arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilate the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in I Image Data Processing	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo	ts with the udents with hisites: To nowledge, off in a given 2 k up tables,
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r	Ins arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequi- blete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in I Image Data Processing epresentation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, re	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo	ts with the udents with hisites: To nowledge, off in a given 2 k up tables,
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre	Ins arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequivelete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, respective for transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression.	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo	ts with the udents with hisites: To nowledge, off in a given 2 k up tables,
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP	Image Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, re	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo s, image restoratio	ts with the udents with hisites: To nowledge, llf in a given 2 k up tables, in, image 2
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of	In a arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequivelete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in limage Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, rester Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression.	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A	ts with the udents with hisites: To nowledge, If in a given 2 k up tables, in, image 2 t the very
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou	In a arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilies the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in linge Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, rester Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression.	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity	ts with the udents with hisites: To nowledge, off in a given 2 k up tables, on, image 2 t the very y of disease
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes.	In a arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilate the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in linage Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, rester Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression.	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an	ts with the udents with hisites: To nowledge, on a given 2 k up tables, on, image 2 t the very y of disease id technical
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e	In a arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilate the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able problem related to legislation without any problems and he should know where he can find individual details related to legal issues in linage Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, rester Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression. Fundamentals of Pathology the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human here tures the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ system of the course is a wide overview of morphological and functional conditions in pathology. The knowledge is then simply transform.	o acquaint student t on acquainting st uisites and co-requ this area. Output k t o orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an nishing of the cour	ts with the udents with uisites: To nowledge, on a given 2 k up tables, on, image 2 t the very y of disease id technical se Anytomy
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e and Physiology II. F	In a arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilate the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able to be roblem related to legislation without any problems and he should know where he can find individual details related to legal issues in linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, relate Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression. Fundamentals of Pathology the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human here to urse the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ syste. The course provides a wide overview of morphological and functional conditions in pathology. The knowledge is then simply transform examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on successful fi	o acquaint student t on acquainting st uisites and co-requ this area. Output k t o orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an nishing of the court f disease, compret	ts with the udents with isites: To nowledge, off in a given 2 k up tables, on, image 2 t the very y of disease id technical se Anytomy tension and
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e and Physiology II. F	Image Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, re ete Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression. Fundamentals of Pathology the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human here ares the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ syste The course provides a wide overview of morphological and functional conditions in pathology. The knowledge is then simply transform examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on successful ficelease and Results: The students obtain basic outline of pathological processes in the human body. Their skills comprise definition of	o acquaint student t on acquainting st uisites and co-requ this area. Output k t o orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an nishing of the court f disease, compret	ts with the udents with isites: To nowledge, off in a given 2 k up tables, on, image 2 t the very y of disease id technical se Anytomy tension and
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e and Physiology II. F description o F7ABOBP	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilite the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able roblem related to legislation without any problems and he should know where he can find individual details related to legal issues in ling Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, relate Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression. Fundamentals of Pathology the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human here are the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ syster The course provides a wide overview of morphological and functional conditions in pathology. The knowledge is then simply transform examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on successful fictelease and Results: The students obtain basic outline of pathological processes in the human body. Their skills comprise definition of of pathological changes in organs and body structure. The theoretical basis of the course is oriented to use in technical branches of the fundamentals of the patients obtain basic outline of pathological processes in the human body. Their skills comprise definition of the pathological changes in organs and body structure. The t	o acquaint student t on acquainting st uisites and co-requ this area. Output k to orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an nishing of the course f disease, compreh iomedical enginee Z	ts with the udents with tisites: To nowledge, on a given 2 k up tables, on, image 2 t the very y of disease d technical se Anytomy nension and ring. 10
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e and Physiology II. F description o F7ABOBP Work of the student	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequilite the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able roblem related to legislation without any problems and he should know where he can find individual details related to legal issues in l Image Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, re eate Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of image compression. Fundamentals of Pathology the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human here examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on successful ficelease and Results: The students obtain basic outline of pathological processes in the human body. Their skills comprise definition of pathological changes in organs and body structure. The theoretical basis of the course is oriented to use in technical branches of b Bachelor Thesis	o acquaint student t on acquainting st uisites and co-requi- this area. Output k to orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an nishing of the cour- f disease, compreh- iomedical enginee Z purses and in the a	ts with the udents with isites: To nowledge, off in a given 2 k up tables, on, image 2 t the very y of disease d technical se Anytomy nension and ring. 10 llotted time.
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e and Physiology II. F description o F7ABOBP Work of the student Outcome knowledg	ns arising from current legislation relating to health care issues. The emphasis is not on memorizing of the text of legal regulations, but and ideas contained in the laws, regulations and standards of the Czech Republic and EU directives in the field of healthcare. Prerequivelete the course, students should know the basics of the principles of medical devices due to the practical application of legislation in competences: After completing the course, the student should have a comprehensive overview of health legislation. He should be able to be reacted to legislation without any problems and he should know where he can find individual details related to legal issues in I Image Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, rester Fourier transform, discrete cosine transform, image enhancement, geometric operations, image filtering, morphological operation segmentation, basic principles of mage compression. Fundamentals of Pathology the course is represented by continuous enlargement of anatomical, physiological and multi-disciplinary consequences in human hears the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ system examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on successful fit Release and Results: The students obtain basic outline of pathological processes in the human body. Their skills comprise definition of pathological changes in organs and body structure. The theoretical basis of the course is oriented to use in technical branches of beachelor Thesis and end for the supervisor and possible consultant on the assigned BP topic, using knowledge and skills from previous constructs and possible consultant on the assigned BP topic, using knowledge and skills from previous constructs and possible consultant on the assigned BP topic, using knowledge and skills from p	o acquaint student t on acquainting st uisites and co-requ this area. Output k t o orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an inishing of the cour- f disease, compreh- iomedical enginee Z burses and in the a le to work under th	ts with the udents with isites: To nowledge, off in a given 2 k up tables, on, image 2 k up tables, on, image 2 k the very y of disease id technical se Anytomy tension and ring. 10 llotted time. te guidance
the main points a successfully comp skills, abilities and o F7ABBZOD Continuous image r histogram, Discre F7ABBZP The main goal of beginning of the cou origin and causes. disciplines used in e and Physiology II. F description o F7ABOBP Work of the student Outcome knowledg of the BP supervise	Image Data Processing representation, linear 2D systems, 2D spectrum, Digital representation of images, Basic image characteristics: brightness, contrast, re segmentation, basic principles of metical and multi-disciplinary consequences in human here are the fundamentals of cell structure disorders and metabolic paths disturbances are provided to understand pathology of organ syste The course provides a wide overview of morphological and functional in pathology. The knowledge is then simply transforr examination and health monitoring of the patients. The Course Requirements: The enrolment to the course is contingent on successful for the patients. The students obtain basic outline of pathological processes in the human body. Their skills comprise definition of pathological changes in organs and body structure. The theoretical basis of the course is oriented to use in technical basis of the patients. The student solution of pathological processes in the fundamental basic outline of pathological processes in the fundamental basic outline of pathological processes in the fundamental basic outline of pathological processes in the human body. Their skills comprise definition of pathological changes in organs and body structure. The theoretical basis of the course is oriented to use in technical branches of bachelor Thesis	o acquaint student t on acquaint student t on acquainting st uisites and co-requ this area. Output k t o orientate himse health care. KZ solution, noise, loo s, image restoratio ZK alth and disease. A ems and complexity nable to clinical an inishing of the cour- f disease, compreh- iomedical enginee Z burses and in the a le to work under th m. This is a Bache	ts with the udents with isites: To nowledge, off in a given 2 k up tables, on, image 2 k up tables, on, image 2 k the very y of disease id technical se Anytomy nension and ring. 10 llotted time. ie guidance lor's thesis,

F7ABOBV	Binocular Vision	Z,ZK	7	
This course builds of	n courses dealing with refraction of the eye and visual functions. Topics include: theory of binocular vision and conditions of its origin, d	evelopment of visu	al functions,	
disorders of binocular vision, practical examination of binocular vision, heterophoria and fixation disparity, relationship of accommodation and vergence, vergence disorders and visual				
	training.			
F7ABOKC1	Contact Lenses I.	Z,ZK	3	
Contact lens history	y and development. Contact lens terminology. Manufacturing methods. Classification of contact lenses and their materials. Material pro	perties. Contact le	ens designs.	
Different methods of	of contact lens wearing and replacement. Contact lens care: composition and principles of action. Indications and contraindications of	contact lenses. Sp	oherical soft	
and rigid lenses. In	strumentation of contact lens practice. Patient history, basic examination and contact lens selection. Instructions regarding handling a	and contact lens ca	are. Contact	
	lens insertion and removal.			
F7ABOKC2	Contact Lenses II.	Z,ZK	5	
Toric contact lenses	s, Bifocal and multifocal lenses and other methods of presbyopia correction. Contact lenses for children. Coloured, cosmetic and prosthe	tic contact lenses.	Therapeutic	
use of contact lens	ses. Special types of contact lenses. Special uses of contact lenses (sports, demanding occupations and environments, patients with	general diseases,	etc.). Drug	
interactions with o	contact lenses. Complications of contact lenses and their solutions. Application of soft and rigid spherical lenses. Application of conta	ct lenses in astigm	atism and	
	presbyopia. Basic and specific care of contact lenses. Inspection of patients with contact lenses.			
F7ABOKRV	Correction of Refractive Errors	ZK	1	
Subject is focused	on theory and practical examination of refractive errors and various possibilities of correction of refractive errors. Optical and surgical	correction of refra	ctive errors.	
Objective methods	of refraction. Subjective methods of refraction. Correction of myopia. Correction of hypermetropia. Correction of astigmatism. Correction	n of presbyopia. De	etermination	
of binocular bala	ance. Basic techniques of surgical correction of refractive errors. Refractive surgery. Methods of laser keratorefractive surgery. Implan	tation of intraocula	r lenses.	
F7ABOOFP	Opthalmology Instruments	ZK	3	
Functional princip	les of different diagnostic and therapeutic ophthalmic devices will be discussed. Students will be able to test most of machines durin	g practical lessons	at clinical	
department. Ove	rview, physical principles, technical construction and parameters of following devices and methods will be studied: slit lamp, ophthalm	noscope (direct and	d indirect,	
confocal scanning),	retinoscope, refractometer, tonometer, campimeter, Heidelberg retinal tomograph, optical coherence tomography, retinal nerve fibre	layer analysis (GD	x), specular	
(endothelial) micros	cope, devices for subjective investigation of astigmatism, devices for investigation of ocular movements, corneal topohraphs, testing of re	efractive balance, e	ikonometer,	
	POLA-test, ortopic machines, Hertel exophthalmometer, devices for color vision testing.			
F7ABOOGB	Geometric and Opthalmic Optics	Z,ZK	5	
This course focuse	s on basics of geometrical optics and its applications in the field of optical design of simple optical elements and systems (lenses, mir	rors, prisms, teleso	copes, etc.).	
The second part of	of the course deals with a description and analysis of a human eye as an optical imaging system. The design and analysis of various	types of spectacle	lenses for	
	correction of refraction errors is presented.c			
F7ABOPO	OPT Project	KZ	5	
	purse is methodical guidance of students in scientific research or development activities in the field of Optics, Optometry or Ophthalm			
	of the project, which will lead to the final Bachelor's Thesis (BP). The secondary objective of the course is to guide students in the syst	,	•	
the solution of the a	assigned task, applying the practices of the field to the tasks or projects solved by the students, as well as deepening the communica	tion skills of the stu	udents. Last	
	but not least, deepening the knowledge of typographic rules, including proofreading marks, etc.	r		
F7ABOSUR1	Subjective Refraction I.	Z,ZK	4	
Basic know	ledges about refraction of the eye. Techniques of the subjective refraction perform testing frame or the phoropter. Techniques of the ex	camination near vis	sion.	
F7ABOSUR2	Subjective Refraction II.	Z,ZK	4	
During the lectures, students deepen their theoretical knowledge and practical skills of subjective refraction with the test frames and test sets of glasses. Further tests will follow on				
	binocular balance, practice working with phoropter and other techniques.			
F7ABOZFO	Foundations of Physiological Optics	ZK	2	
Fundamentals of o	otical imaging. Physiological structure of human eye, its geometric and physical properties. Visual perception. Sensitivity of eye. Optic	al system of huma	n eye. Axes	
and pupils of eye. Schematic optical models of human eye. Photometric parameters of optical system of eye. Accommodation and aging of eye. Monochromatic and chromatic aberrations				
of human eye. Resolving power and depth of field. Influence of aberrations on image quality. Contrast sensitivity. Ametropy. Astigmatism. Aphakia. Amblyopy. Physiology of eye				
movement, methods of eye tracking. Basic principles of binocular and stereoscopic vision.				

For updated information see <u>http://bilakniha.cvut.cz/en/FF.html</u> Generated: day 2025-07-19, time 23:23.