

Recommended pass through the study plan

Name of the pass: Biomedical informatics 23/24, 24/25

Faculty/Institute/Others:

Department:

Pass through the study plan: Biomedical informatics

Branch of study guaranteed by the department: Welcome page

Guarantor of the study branch:

Program of study: Informatics and Cybernetics in Health Care

Type of study: Bachelor full-time

Note on the pass: Informaci o p edepsaném minimálním po tu PV p edm t pro konkrétní jednotlivé semestry najdete v odpovídajícím studijním plánu specializace.

Coding of roles of courses and groups of courses:

P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):

KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
F7PBKALP	Algorithmization and Programming <i>Pavel Smr ka, Tomáš Funda, Tomáš Veselý, Lenka Hanáková Tomáš Funda Pavel Smr ka (Gar.)</i>	Z,ZK	6	2P+2C	Z	z
F7PBKAJ1	English I. <i>Eva Maxová, Eva Moty ková Eva Moty ková Eva Moty ková (Gar.)</i>	KZ	2	2S	Z	z
17BOZP	Occupational Safety and Health, Fire Protection and First Aid <i>Petr Kudrna Petr Kudrna Petr Kudrna (Gar.)</i>	Z	0	1P	Z	z
F7PBKKT	Communication Technology <i>Tomáš Funda, Tomáš Veselý, Karel Hána, Martin Vít zník, Markéta Janatová, Aneta Buchtelová, Kate ina Pilátová Tomáš Funda Karel Hána (Gar.)</i>	Z,ZK	3	1P+1C	Z	z
F7PBKLAD	Linear Algebra and Differential Calculus <i>Ji í Neustupa, Jana Urzová Jana Urzová Petr Maršálek (Gar.)</i>	Z,ZK	6	2P+4C	Z	z
F7PBKLG	Logic <i>Dagmar Brechlerová Dagmar Brechlerová Dagmar Brechlerová (Gar.)</i>	Z,ZK	5	2P+2C	Z	z
F7PBKMAZ	Management and Administration in Health Care <i>Ji í erný Ji í erný Ji í erný (Gar.)</i>	KZ	1	1P	Z	z
F7PBKPND	Presentation Tools and Skills <i>Anna Hor áková Anna Hor áková Anna Hor áková (Gar.)</i>	KZ	2	1P+1C	Z	z
F7PBKPR1	Project I. <i>Pavel Smr ka, Karel Hána, Filip Hrdli ka, Jaroslav Pr cha, Ján Hýbl, Sára Barboríková, Jan Kašpar, Christiane Malá, Tomáš Kraj a Karel Hána Karel Hána (Gar.)</i>	KZ	5	1S	Z	z

Number of semester: 2

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
F7PBKAJ2	English II. <i>Eva Maxová</i>	KZ	2	2S	L	z
F7PBKDDS	Data and Data Structures <i>Radim Krupi ka</i>	Z,ZK	5	2P+2C	L	z
F7PBKITP	Integral Calculus <i>Petr Maršálek</i>	Z,ZK	6	2P+4C	L	z
F7PBKML	Matlab <i>Michal Reimer</i>	KZ	3	2C	L	z
F7PBKOS	Operating Systems <i>Jan Mužík</i>	Z,ZK	4	1P+2C	L	z
F7PBKPPP	Programming Tools <i>Pavel Smr ka</i>	KZ	2	2C	L	z
F7PBKPR2	Project II. <i>Karel Hána</i>	KZ	5	1S	L	z

F7PBKTVR	Telemedicine and Virtual Reality <i>Karel Hána</i>	KZ	3	2C	L	z
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Number of semester: 3

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
F7PBKAJ3	English III. <i>Eva Maxová Eva Maxová Eva Maxová (Gar.)</i>	KZ	2	2S	Z	z
F7PBKDS	Database Systems <i>Tomáš Kraj a, Slávka Ne uková Slávka Ne uková Slávka Ne uková (Gar.)</i>	Z,ZK	4	2P+2C	Z	z
F7PBKISZ	Information Systems in Health Care <i>Dagmar Brechlerová, Anna Horáková, Tomáš Kraj a, Zoltán Szabó, David Jirsa, Petr Šmíd Anna Horáková Zoltán Szabó (Gar.)</i>	Z,ZK	4	2P+2C	Z	z
F7PBKOOB	Object Oriented Programming <i>Tomáš Kraj a, Radim Krupí ka Radim Krupí ka Radim Krupí ka (Gar.)</i>	Z,ZK	3	1P+2C	Z	z
F7PBKPM5-I	Probability and Mathematical Statistics <i>Jan Štrobl, Marek Piorecký Tomáš Nagy Marek Piorecký (Gar.)</i>	Z,ZK	5	2P+2C	Z	z
F7PBKPR3	Project II. <i>Pavel Smr ka, Karel Hána, Dagmar Brechlerová, Tomáš Kraj a, Michal Reimer Karel Hána Karel Hána (Gar.)</i>	KZ	5	1S	Z	z
F7PBKU55	Introduction to Systems and Signals <i>Jan Kauler Jan Kauler Jan Kauler (Gar.)</i>	Z,ZK	5	2P+2C	Z	z
F7PBKZTMS	Fundamentals of Theoretical Medicine - Somatology <i>Martina Dingová Šliková Martina Dingová Šliková Martina Dingová Šliková (Gar.)</i>	Z,ZK	2	2P	Z	z

Number of semester: 4

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
F7PBKAJ4	English IV. <i>Eva Moty ková</i>	KZ	2	2S	L	z
F7PBKAZI-I	Applied Informatics in Health Care <i>Christiane Malá</i>	Z,ZK	2	1P+1C	L	z
F7PBKMS-I	Modeling and Stimulation <i>Jan Kauler</i>	Z,ZK	5	2P+2C	L	z
F7PBKPS-I	Computer Network <i>Radim Krupí ka</i>	Z,ZK	4	2P+2C	L	z
F7PBKPPT-I	Advanced Programming Techniques <i>Radim Krupí ka</i>	KZ	3	2C	L	z
F7PBKPR4	Project IV. <i>Karel Hána</i>	KZ	5	1S	L	z
F7PBKTWA	Web Application Development <i>David Jirsa</i>	Z,ZK	3	1P+2C	L	z
F7PBKZSI	Software Engineering Fundamentals <i>Jan Mužík</i>	Z,ZK	4	2P+2C	L	z
F7PBKZTMG-I	Fundamentals of Theoretical Medicine -Genetics and Microbiology <i>Taána Jarošíková Taána Jarošíková Taána Jarošíková (Gar.)</i>	ZK	2	2P	L	z

Number of semester: 5

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
F7PBKBPD	Data Transmission and Processing Security <i>Dagmar Brechlerová, Martin Stan k Martin Stan k Dagmar Brechlerová (Gar.)</i>	Z,ZK	4	2P+2C	Z	z
F7PBKBIA-I	Bioinformatics	Z,ZK	4	2P+2C	Z	z
F7PBKPPN	Health Legislation and Standards <i>Peter Kneppo Peter Kneppo (Gar.)</i>	KZ	2	1P+1C	Z	z
F7PBKPR5	Project V. <i>Karel Hána, Dagmar Brechlerová, Christiane Malá, Michal Reimer, Martin Bejtíc, Pavla Suchánková, Patrik Pluhovský, Jan Broulím, Jan Mužík Karel Hána Karel Hána (Gar.)</i>	KZ	6	1S	Z	z
F7PBKSFI	Software Engineering <i>Jan Mužík, Pavel Trnka, Dominik Fiala Jan Mužík Jan Mužík (Gar.)</i>	Z,ZK	4	2P+2C	Z	z

F7PBKUIEA	Artificial Intelligence and Expert Systems	Z,ZK	4	2P+2C	Z	z
F7PBKZTMF-I	Fundamentals of Theoretical Medicine - Physiology and Pathophysiology <i>Taána Jarošíková Taána Jarošíková Taána Jarošíková (Gar.)</i>	ZK	2	2P	Z	z
F7PBKZOD-I	Image Processing <i>Zoltán Szabó</i>	Z,ZK	4	2P+2C	Z	z

Number of semester: 6

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
F7PBKATR	Assistive Technology and Robotics in Medicine <i>Jan Kauler</i>	Z,ZK	5	2P+2C	L	z
F7PBKBP	Bachelor Thesis <i>Karel Hána</i>	Z	12	2S	L	z
F7PBKBSA-I	Biological Signals	Z,ZK	4	2P+2C	L	z
F7PBKNVMA-I	Design and Development of Mobile Applications	Z,ZK	4	2P+2C	L	z
F7PBKPBIA-I	IT Law and Security	Z,ZK	2	1P+1C	L	z
F7PBKSBP	Bachelor Thesis Seminar <i>Radim Krupíka</i>	Z	3	2S	L	z

List of groups of courses of this pass with the complete content of members of individual groups

List of courses of this pass:

Code	Name of the course	Completion	Credits
17BOZP	Occupational Safety and Health, Fire Protection and First Aid	Z	0
F7PBKAJ1	English I.	KZ	2
F7PBKAJ2	English II.	KZ	2
F7PBKAJ3	English III.	KZ	2
F7PBKAJ4	English IV.	KZ	2
F7PBKALP	Algorithmization and Programming	Z,ZK	6
F7PBKATR	Assistive Technology and Robotics in Medicine	Z,ZK	5
F7PBKAZI-I	Applied Informatics in Health Care	Z,ZK	2
F7PBKBIA-I	Bioinformatics	Z,ZK	4
F7PBKBP	Bachelor Thesis	Z	12
F7PBKBDP	Data Transmission and Processing Security	Z,ZK	4
F7PBKBSA-I	Biological Signals	Z,ZK	4
F7PBKDDS	Data and Data Structures	Z,ZK	5
F7PBKDS	Database Systems	Z,ZK	4
F7PBKISZ	Information Systems in Health Care	Z,ZK	4
F7PBKITP	Integral Calculus	Z,ZK	6
F7PBKKT	Communication Technology	Z,ZK	3
<p>Význam a praktické příklady nasazení informačních a komunikačních technologií ve zdravotnictví. Historie, základní struktura a rozdělení počítače, motherboard, sběrnice, BIOS, autotest, procesor, operační paměť, klasické a SSD pevné disky, paměťové karty, zvukové karty, grafické karty, monitory, klávesnice, myši, tiskárny a skenery, univerzální vstupní výstupní porty (USB, USB-C, HDMI, DisplayPort, Thunderbolt, HDMI, S/PDIF), RS232 jako virtuální COM port a jeho použití v praxi, modemy, nejčastější sběrnice pro propojování periférií v mikroprocesorových systémech (IIC, SPI), nejčastější sběrnice pro komunikaci přístrojů a systémů ve zdravotnictví, standardizace, operační systémy, mobilní platforma pro snímání, vyhodnocování a přenos dat, rozhraní Bluetooth, NFC, počítačové sítě, LAN, WAN, vrstvý referenční model OSI, základní technické prostředí LAN (Ethernet, WiFi a jejich praktická realizace), Internet - prohlížeč, používané standardy a jazyky, úvod do architektury TCP/IP, protokoly a adresování, propojování lokálních sítí, brány a směrovače, pojem „server“, architektura klient-server, nejčastěji používané protokoly síťové architektury TCP/IP: HTTP, FTP, DNS, DHCP, VPN.</p>			
F7PBKLAD	Linear Algebra and Differential Calculus	Z,ZK	6
F7PBKLG	Logic	Z,ZK	5
F7PBKMAZ	Management and Administration in Health Care	KZ	1
F7PBKML	Matlab	KZ	3
F7PBKMS-I	Modeling and Stimulation	Z,ZK	5

F7PBKNVMA-I	Design and Development of Mobile Applications	Z,ZK	4
F7PBKOOOP	Object Oriented Programming	Z,ZK	3
F7PBKOS	Operating Systems	Z,ZK	4
F7PBKPBIA-I	IT Law and Security	Z,ZK	2
F7PBKPMMS-I	Probability and Mathematical Statistics	Z,ZK	5
F7PBKPNP	Presentation Tools and Skills	KZ	2
F7PBKPPN	Health Legislation and Standards	KZ	2
F7PBKPPP	Programming Tools	KZ	2
F7PBKPPT-I	Advanced Programming Techniques	KZ	3
F7PBKPR1	Project I.	KZ	5
F7PBKPR2	Project II.	KZ	5
F7PBKPR3	Project II.	KZ	5
F7PBKPR4	Project IV.	KZ	5
F7PBKPR5	Project V.	KZ	6
F7PBKPS-I	Computer Network	Z,ZK	4
F7PBKSBP	Bachelor Thesis Seminar	Z	3
F7PBKSFI	Software Engineering	Z,ZK	4
F7PBKTVR	Telemedicine and Virtual Reality	KZ	3
F7PBKTWA	Web Application Development	Z,ZK	3
F7PBKUIEA	Artificial Intelligence and Expert Systems	Z,ZK	4
F7PBKUSS	Introduction to Systems and Signals	Z,ZK	5
F7PBKZOD-I	Image Processing	Z,ZK	4
F7PBKZSI	Software Engineering Fundamentals	Z,ZK	4
F7PBKZTMF-I	Fundamentals of Theoretical Medicine - Physiology and Pathophysiology	ZK	2
F7PBKZTMG-I	Fundamentals of Theoretical Medicine -Genetics and Microbiology	ZK	2
F7PBKZTMS	Fundamentals of Theoretical Medicine - Somatology	Z,ZK	2

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

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