

Recommended pass through the study plan

Name of the pass: Biomedical informatics 20/21, 21/22, 22/23

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 (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, Radim Kliment, Jan Kauler, Radim Kliment, David Jirsa, Radim Krupi ka, Jan Mužík, Filip Hrdlí ka, 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 Moty ková Eva Moty ková (Gar.)</i>	KZ	2	2S	L	z
F7PBKDDS	Data and Data Structures <i>Jan Kauler, Radim Krupi ka Radim Krupi ka Radim Krupi ka (Gar.)</i>	Z,ZK	5	2P+2C	L	z
F7PBKITP	Integral Calculus <i>Jana Urzová Jana Urzová Jana Urzová (Gar.)</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 Jan Mužík Jan Mužík (Gar.)</i>	Z,ZK	4	1P+2C	L	z
F7PBKPPP	Programming Tools <i>Pavel Smr ka, Tomáš Funda, Radim Kliment, Michaela Gaea olakovová Pavel Smr ka Pavel Smr ka (Gar.)</i>	KZ	2	2C	L	z

F7PBKPR2	Project II. Pavel Smr ka, Karel Hána, Dagmar Brechlerová, Radim Kliment, Jan Kauler, Jan Mužík, Christiane Malá, Tomáš Kraj a, Ond ej Klempí , Karel Hána Karel Hána (Gar.)	KZ	5	1S	L	Z
F7PBKTVR	Telemedicine and Virtual Reality Pavel Smr ka, Karel Hána, Markéta Janatová, Radim Kliment, Vít Janovský, Ji í Brada Karel Hána Karel Hána (Gar.)	KZ	3	2C	L	Z

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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PBKAJ3	English III. Eva Maxová Eva Maxová Eva Maxová (Gar.)	KZ	2	2S	Z	Z
F7PBKDS	Database Systems Tomáš Kraj a, Slávka Ne uková Slávka Ne uková Slávka Ne uková (Gar.)	Z,ZK	4	2P+2C	Z	Z
F7PBKISZ	Information Systems in Health Care Dagmar Brechlerová, Anna Hor áková, David Jirsa, Tomáš Kraj a, Zoltán Szabó, Petr Šmíd Anna Hor áková Zoltán Szabó (Gar.)	Z,ZK	4	2P+2C	Z	Z
F7PBKOOOP	Object Oriented Programming Radim Krupi ka, Tomáš Kraj a Radim Krupi ka Radim Krupi ka (Gar.)	Z,ZK	3	1P+2C	Z	Z
F7PBKPMMS-I	Probability and Mathematical Statistics Jan Štrobil, Marek Piorecký Tomáš Nagy Marek Piorecký (Gar.)	Z,ZK	5	2P+2C	Z	Z
F7PBKPBI-I	IT Law and Security Dagmar Brechlerová	Z,ZK	3	1P+1C	Z	Z
F7PBKPR3	Project II. Pavel Smr ka, Karel Hána, Dagmar Brechlerová, Radim Krupi ka, Christiane Malá, Tomáš Kraj a, Michal Reimer, Ji í Millek Karel Hána Karel Hána (Gar.)	KZ	5	1S	Z	Z
F7PBKZTM1	Fundamentals of Theoretical Medicine I.	Z,ZK	2	2P	Z	Z
F7PBKZIZ-I	Medical Information Resources Anna Hor áková	KZ	2	1P+1C	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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PBKAJ4	English IV. Eva Maxová Eva Moty ková Eva Moty ková (Gar.)	KZ	2	2S	L	Z
F7PBKAZI-I	Applied Informatics in Health Care Christiane Malá Christiane Malá Christiane Malá (Gar.)	Z,ZK	2	1P+1C	L	Z
F7PBKMS-I	Modeling and Stimulation Jan Kauler Jan Kauler Jan Kauler (Gar.)	Z,ZK	5	2P+2C	L	Z
F7PBKPS-I	Computer Network Radim Krupi ka, Michal Reimer Radim Krupi ka Radim Krupi ka (Gar.)	Z,ZK	4	2P+2C	L	Z
F7PBKPPT-I	Advanced Programming Techniques Radim Krupi ka, Tomáš Kraj a Radim Krupi ka Radim Krupi ka (Gar.)	KZ	3	2C	L	Z
F7PBKPR4	Project IV. Pavel Smr ka, Karel Hána, Dagmar Brechlerová, Radim Krupi ka, Jan Mužík, Ján Hýbl, Christiane Malá, Tomáš Kraj a, Michal Reimer, Karel Hána Karel Hána (Gar.)	KZ	5	1S	L	Z
F7PBKTWA	Web Application Development David Jirsa David Jirsa	Z,ZK	3	1P+2C	L	Z
F7PBKZSI	Software Engineering Fundamentals Jan Mužík Jan Mužík Jan Mužík (Gar.)	Z,ZK	4	2P+2C	L	Z
F7PBKZTM2	Fundamentals of Theoretical Medicine II. Ta ána Jarošíková, Jozef Rosina Ta ána Jarošíková Ta ána Jarošíková (Gar.)	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) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PBKBPD	Data Transmission and Processing Security Dagmar Brechlerová, Martin Stan k Martin Stan k Dagmar Brechlerová (Gar.)	Z,ZK	4	2P+2C	Z	Z
F7PBKBI-I	Bioinformatics Ond ej Klempí Ond ej Klempí Ond ej Klempí (Gar.)	Z,ZK	5	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>Pavel Smr ka, Karel Hána, Dagmar Brechlerová, David Jirsa, Jan Mužík, Christiane Malá, Tomáš Kraj a, Michal Reimer, Martin Bejtík, Karel Hána Karel Hána (Gar.)</i>	KZ	6	1S	Z	z
F7PBKFSI	Software Engineering <i>Jan Mužík, Pavel Trnka Jan Mužík Jan Mužík (Gar.)</i>	Z,ZK	4	2P+2C	Z	z
F7PBKUIE	Artificial Intelligence and Expert Systems <i>Radim Krupi ka Radim Krupi ka (Gar.)</i>	Z,ZK	5	2P+2C	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 Jan Kauler Jan Kauler (Gar.)</i>	Z,ZK	5	2P+2C	L	z
F7PBKBP	Bachelor Thesis <i>Karel Hána, Dagmar Brechlerová, Radim Krupi ka, Jan Mužík, Christiane Malá, Michal Reimer, Jan Broulím, Patrik Pluhovský, Pavla Suchánková Karel Hána Karel Hána (Gar.)</i>	Z	12	2S	L	z
F7PBKBS-I	Biological Signals	Z,ZK	5	2P+2C	L	z
F7PBKNVM-I	Design and Development of Mobile Applications <i>Radim Kliment</i>	Z,ZK	5	2P+2C	L	z
F7PBKSBP	Bachelor Thesis Seminar <i>Karel Hána, Radim Krupi ka, Christiane Malá Radim Krupi ka Radim Krupi ka (Gar.)</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
F7PBKBI-I	Bioinformatics	Z,ZK	5
F7PBKBP	Bachelor Thesis	Z	12
F7PBKBPD	Data Transmission and Processing Security	Z,ZK	4
F7PBKBS-I	Biological Signals	Z,ZK	5
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

Význam a praktické příklady nasazení informačních a komunikačních technologií ve zdravotnictví. Historie, základní struktura a rozdělení počítače, motherboard, sbírnice, BIOS, autotest, procesor, operační paměť, klasické a SSD pevné disky, paměťové karty, zvukové karty, grafické karty, monitory, klávesnice, myši, tiskárny a skenery, univerzální vstupní a výstupní porty (USB, USB-C, HDMI, DisplayPort, Thunderbolt, HDMI, S/PDIF), RS232 jako virtuální COM port a jeho použití v praxi, modemy, nejčastější sbírnice pro připojení periférií v mikroprocesorových systémech (IIC, SPI), nejčastější sbírnice 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.

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
F7PBKNVM-I	Design and Development of Mobile Applications	Z,ZK	5
F7PBKOOOP	Object Oriented Programming	Z,ZK	3
F7PBKOS	Operating Systems	Z,ZK	4
F7PBKPBI-I	IT Law and Security	Z,ZK	3
F7PBKPMS-I	Probability and Mathematical Statistics	Z,ZK	5
F7PBKPND	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
F7PBKUIE	Artificial Intelligence and Expert Systems	Z,ZK	5
F7PBKZIZ-I	Medical Information Resources	KZ	2
F7PBKZOD-I	Image Processing	Z,ZK	4
F7PBKZSI	Software Engineering Fundamentals	Z,ZK	4
F7PBKZTM1	Fundamentals of Theoretical Medicine I.	Z,ZK	2
F7PBKZTM2	Fundamentals of Theoretical Medicine II.	ZK	2

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

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