Recomended pass through the study plan

Name of the pass: AIPV

Faculty/Institute/Others:
Department:
Pass through the study plan: Applications of Informatics in Natural Sciences
Branch of study guranteed by the department: Welcome page
Guarantor of the study branch:
Program of study: Applications of Informatics in Natural Sciences
Type of study: Bachelor full-time
Note on the pass: 2023/2024

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)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
818DTB1	**Database 1** *Josef Nový **Josef Nový** Josef Nový (Gar.)*	KZ	2	2C	Z	V
818RM1	**Mathematics Repetitorium 1** *Linda Mrázková **Linda Mrázková** Linda Mrázková (Gar.)*	Z	3	0P+3C	Z	V
818ZDTP	**Data Processing using Spreadsheet** *Linda Mrázková **Dana Majerová** Dana Majerová (Gar.)*	Z	2	0P+2C	Z	V

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)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
818DTB2	**Database 2** *Josef Nový **Josef Nový** Josef Nový (Gar.)*	KZ	2	2C	L	V
818RM2	**Mathematics Repetitorium 2** *Pavel Eichler **Pavel Eichler** Pavel Eichler (Gar.)*	Z	2	0P+2C	L	V
818TDM	**3D modeling** *Jan Thiele **Dana Majerová** Dana Majerová (Gar.)*	Z	3	1P+2C	L	V

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
804XAM1	**English for Intermediate Students M1** *Karolina Beauxisová*	Z	2	0P+2C	Z	J
804XAP1	**English for Advanced Students P1** *Karolina Beauxisová*	Z	2	0P+2C	Z	J
804XNM1	**German for Intermediate Students M1** *Světlana Petrová, Světlana Petrová **Světlana Petrová***	Z	2	0P+2C	Z	J
804XNP1	**German for Advanced Students P1** *Světlana Petrová*	Z	2	0P+2C	Z	J
818NES1	**Neural Networks 1** *Kateřina Horaisová **Kateřina Horaisová** Kateřina Horaisová (Gar.)*	Z	2	1+1	Z	V
818TV1	**Physical Education 1** *Dana Majerová **Dana Majerová** Dana Majerová (Gar.)*	Z	1	0+2	Z	V
818TVS1	**Team Development of Software 1** *Michal Moc **Michal Moc** Michal Moc (Gar.)*	KZ	3	0P+3C	Z	V
818ZDVP	**Data Processing in Pandas** *Jiří Fišer **Jiří Fišer** Jiří Fišer (Gar.)*	Z	2	2C	Z	V

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
804XAM2	**English for Intermediate Students M2** *Karolina Beauxisová*	Z	2	0P+2C	L	J
804XAP2	**English for Advanced Students P2** *Karolina Beauxisová*	Z	2	0P+2C	L	J
804XNM2	**German for Intermediate Students M2** *Světlana Petrová*	Z	2	0P+2C	L	J
804XNP2	**German for Advanced Students P2** *Světlana Petrová*	Z	2	0P+2C	L	J
818NES2	**Neural Networks 2** *Kateřina Horaisová **Kateřina Horaisová** Kateřina Horaisová (Gar.)*	Z	2	1+1	L	V
818TV2	**Physical Education 2** *Dana Majerová **Dana Majerová** Dana Majerová (Gar.)*	Z	1	0+2	L	V
818TVS2	**Team Development of Software 2** *Michal Moc **Michal Moc** Michal Moc (Gar.)*	KZ	3	0P+3C	L	V

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
804XAM3	**English for Intermediate Students M3** *Karolina Beauxisová*	Z	2	0P+2C	Z	J
804XAP3	**English for Advanced Students P3** *Karolina Beauxisová*	Z	2	0P+2C	Z	J
804XNM3	**German for Intermediate Students M3** *Světlana Petrová, Světlana Petrová **Světlana Petrová***	Z	2	0P+2C	Z	J
804XNP3	**German for Advanced Students P3** *Světlana Petrová*	Z	2	0P+2C	Z	J
804XAMZK	**English for Intermediate Students Examination** *Karolina Beauxisová*	ZK	4		Z	PV
804XAPZK	**English for Advanced Students Examination** *Karolina Beauxisová*	ZK	4		Z	PV
804XNMZK	**German for Intermediate Students Examination** *Světlana Petrová, Světlana Petrová **Světlana Petrová***	ZK	4		Z	PV
804XNPZK	**German for Advanced Students Examination** *Světlana Petrová*	ZK	4		Z	PV
818NES3	**Neural Networks 3** *Josef Nový **Josef Nový** Josef Nový (Gar.)*	Z	2	0P+2C	Z	V
818PMT	**Programming for mobile phones on the J2ME platform** *Jiří Fišer **Jiří Fišer** Jiří Fišer (Gar.)*	Z	3	0+3	L	V
818TV3	**Physical Education 3** *Dana Majerová **Dana Majerová** Dana Majerová (Gar.)*	Z	1	0+2	Z	V
818TVS3	**Software Team Development 3** *Michal Moc **Michal Moc** Michal Moc (Gar.)*	KZ	3	0+3	Z	V

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)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
818SVK	**Student's Scientific Conference** *Kateřina Horaisová **Kateřina Horaisová** Jiří Mikyška (Gar.)*	Z	1	5 dní	L	V
818TV4	**Physical Education 4** *Dana Majerová **Dana Majerová** Dana Majerová (Gar.)*	Z	1	0+2	L	V
818TVS4	**Software Team Development 4** *Michal Moc **Michal Moc** Michal Moc (Gar.)*	KZ	3	0+3	L	V

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
804XAM1	English for Intermediate Students M1	Z	2
The course is designed for students who have successfully completed the full secondary school English language course at least at the A2 level of the Common European Framework of Reference for Languages (CEFR). It provides an introduction into English for Specific and Academic Purposes (ESP, EAP), i.e., into fundamentals of vocabulary and style typical of professional oral and written communication situations. Thus it covers topics related to the student´s life and needs as well as topics of subtechnical interest. Attention is also paid to extending the knowledge of grammar issues used in EAP.			
804XAM2	English for Intermediate Students M2	Z	2
The AM2 course expects the student to have completed the AM1 course. It develops their skills for work with subtechnical texts, focusing also more on specific grammar, functions, and lexical items typical of ESP and EAP (e.g., definition, existence and classification of phenomena, object descriptions). Part of the course is also guided writing. If necessary, grammar revision is included.			
804XAM3	English for Intermediate Students M3	Z	2
The course develops the skills that enable students to cope with features typical of professional style. Increasing attention is paid to developing subtechnical vocabulary and independent understanding of professional texts. Great emphasis is placed on distinguishing different levels of formal and informal oral and written communication and their appropriate Czech equivalents. The course also includes studying abstracts and rules for writing them as well as basic rules for preparing and giving a short presentation on a chosen topic related to the student´s field.			
804XAMZK	English for Intermediate Students Examination	ZK	4
The course content is the examination as given by the study plan. The examination covers the AM1, AM2, and AM3 courses and consists of two parts - written (100 min) and oral (20-30 min). The student is expected to master the AM syllabus and demonstrate the ability to apply their knowledge gained in the three English courses.			
804XAP1	English for Advanced Students P1	Z	2
The course is designed for students who have successfully completed the full secondary school English language course (at least the B1 level of the Common European Framework of Reference for Languages - CEFR). It provides an introduction into English for Specific and Academic Purposes (ESP, EAP), i.e., into the fundamentals of vocabulary, functions, grammar, and style typical of professional oral and written communication situations (fundamentals of terms in mathematics and physics, definitions, graph descriptions, etc). It also covers professional oral and written communication on topics related to the undergraduate´s life and needs. It develops skills for free professional writing (writing a CV, letter of application, polite request). If necessary, revision of selected grammar topics is included.			
804XAP2	English for Advanced Students P2	Z	2
The AP2 course is based on AP1, thus extending the student´s skills for working with subtechnical texts, and even with professional texts of chosen branches of science. According to the students´ needs it concentrates on chosen grammar topics, but mainly intends to develop understanding of syntactic structures and typical rhetorical functions (e.g., various types of descriptions, and, if possible, a case study). Increasing emphasis is placed on the undergraduate´s independent work with and reading of linguistically more demanding materials. The course extends the student´s subtechnical vocabulary, and includes fundamental notions of chosen branches of science. It is focused on formal writing including the sentence and paragraph structure, linking, cohesion and coherence in texts.			
804XAP3	English for Advanced Students P3	Z	2
The AP3 course is based on AP2 and expects the student to work without any guidance with authentic professional materials and to interpret the text. It includes training oral and written communication skills and functions (e.g., expressing an opinion, agreement, and objections; taking part in discussion, note-taking; summarizing, writing an abstract) and, if possible, also preparing a project on a given or chosen topic and presenting it. The course places emphasis on distinguishing levels of formal and informal language both in oral and written communication.			
804XAPZK	English for Advanced Students Examination	ZK	4
The course content is the examination as given by the study plan. The student is supposed to demonstrate mastering the AP3 syllabus and the ability to apply their knowledge obtained in the three AP courses. The examination consists of 2 parts - written (110 min) and oral (30 min) and includes also oral presentation of a topic from the student´s field of study.			
804XNM1	German for Intermediate Students M1	Z	2
The objective of the course is to level off the students´ skills in the German language. The course focuses on revision of more difficult phenomena and structures (e.g. the passive) and word formation processes (e.g. importance of verb prefixes). In the lexical part, it covers topics referring to higher education in both the Czech Republic and Germany, current environmental issues together with all necessary expressions and phrases, expressions and phrases needed to chemists, mathematicians, physicists, and the fundamentals of IT terminology. It develops communication on related topics and is aimed at correct pronunciation, grammatical correctness and understandability.			
804XNM2	German for Intermediate Students M2	Z	2
The course introduces other more complex grammatical structures and their application in communication based on technical texts, such as the relation between technology and society, the world at the beginning of the 21st century, linguistically more demanding texts on the environment, the language of mathematics, computers and car technology etc. Students practise reading for information and reading aloud, and appropriate language for various purposes in oral and written communication. The course systematically revises other grammatical phenomena important for professional discourse (participles, relative clauses).			
804XNM3	German for Intermediate Students M3	Z	2
The course introduces other more complex grammatical structures and their application in communication based on technical texts, such as the relation between technology and society, the world at the beginning of the 21st century, linguistically more demanding texts on the environment, the language of mathematics, computers and car technology etc. Students practise reading for information and reading aloud, and appropriate language for various purposes in oral and written communication. The course systematically revises other grammatical phenomena important for professional discourse (participles, relative clauses).			
804XNMZK	German for Intermediate Students Examination	ZK	4
The course content is the examination as given by the study plan. The whole German for Intermediate Students Course is completed by an examination consisting of two parts - written and oral, which cover the courses NM1 - NM3. The oral part follows after passing the written part successfully and after obtaining the 04NM3 assessment. More detailed information is to be obtained from the teacher.			
804XNP1	German for Advanced Students P1	Z	2
This course requires good grammar knowledge, extended general vocabulary, and good communication skills acquired at secondary school to be levelled off at the beginning of the course. The course is then focused on working with technical and scientific texts and practising reading techniques (skimming, scanning, reading for detail). It revises and develops more difficult grammar structures necessary for understanding a subtechnical text (passive voice, participles, participle structures) and it also focuses on practical everyday communication, i.e., telephoning.			
804XNP2	German for Advanced Students P2	Z	2
The course develops the students' skills in working with professional scientific texts (understanding, summarising, note-taking, interpreting) while extending their general and subtechnical vocabulary range. It introduces mathematical expressions and texts of nuclear power engineering. Increasing emphasis is placed on understanding and practising formal communication, both written and oral (CV, letter of application, interview, scholarship), and more complex grammatical structures (i.e., subjunctive, indirect speech).			

804XNP3	German for Advanced Students P3	Z	2
The course consists of 3 main parts (general communicative situations, grammar and technical topics). Students will develop their vocabulary in a variety of less common situations (traffic problems and car accidents, accident report, filling in a form, complaints). Based on presentations and technical and subtechnical texts, the vocabulary range in fields such as nuclear power engineering, the environment, computer science, and car technology, will also be extended. Only authentic professional texts are used. By means of a presentation, students are trained to process information gained from their reading of complex and difficult texts and present it to the class in a simplified oral form. The course also includes translation practice to and from German.			
804XNPZK	German for Advanced Students Examination	ZK	4
The course content is the examination as given by the study plan. The whole German for Advanced Students Course is completed by an examination consisting of two parts - written and oral, which cover the courses NP1 - NP3. The oral part follows after passing the written part successfully and after obtaining the 04NP3 ungraded assessment. More detailed information is to be obtained from the teacher.			
818DTB1	Database 1	KZ	2
The aim of the course "Database 1" is to introduce students to the principles of normalization of relational databases and their design. The course is implemented only in the city of Děčín.			
818DTB2	Database 2	KZ	2
The course "Database 2" is devoted to the SQL language. Students will learn the basic SQL commands (creating tables, inserting/updating and deleting data), the various options for selecting data (including aggregation) and creating views. Students will also learn about programming on the database system side (triggers, stored procedures).			
818NES1	Neural Networks 1	Z	2
Mathematical analysis, model theory and biological context are used for construction of simple models of neural structures. The models are able to learn from pattern sets and their structures and parameters are subjects of optimization.			
818NES2	Neural Networks 2	Z	2
The second module is oriented first to multi-layer neural networks and next to self-organized artificial neural networks. The biological context, cluster analysis and principal component analysis are used for self-organized artificial neural network realization. Self-organization is discussed in vector spaces.			
818NES3	Neural Networks 3	Z	2
818PMT	Programming for mobile phones on the J2ME platform	Z	3
Practical programming on the Java ME mobile platform (this platform is ported for the majority of normal and smartphones). The practical exercises are aimed to implementation of implementation of interactive network oriented applications.			
818RM1	Mathematics Repetitorium 1	Z	3
818RM2	Mathematics Repetitorium 2	Z	2
818SVK	Student's Scientific Conference	Z	1
This is the active participation of the student in one of the approved student conferences. The list of such conferences is defined by the course guarantor.			
818TDM	3D modeling	Z	3
Students will learn the basics of 3D modeling software tools and with polygon and parametric modeling principles. This course is available only in Děčín.			
818TV1	Physical Education 1	Z	1
Swimming, bodybuilding, skiing course, boating course and tourism.			
818TV2	Physical Education 2	Z	1
Swimming, bodybuilding, skiing course, boating course and tourism.			
818TV3	Physical Education 3	Z	1
Swimming, bodybuilding, skiing course, boating course and tourism.			
818TV4	Physical Education 4	Z	1
Swimming, bodybuilding, skiing course, boating course and tourism.			
818TVS1	Team Development of Software 1	KZ	3
Simulation of software development on the team - communication between team members, allocating tasks and its monitoring. Analysis and design of concrete application.			
818TVS2	Team Development of Software 2	KZ	3
The course builds on 818TVS1. The individual teams will continue development and testing of a concrete application, creating documentation.			
818TVS3	Software Team Development 3	KZ	3
818TVS4	Software Team Development 4	KZ	3
818ZDTP	Data Processing using Spreadsheet	Z	2
818ZDVP	Data Processing in Pandas	Z	2

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