

Recommended pass through the study plan

Name of the pass: Specialization Human-Computer Interaction - Passage through study

Faculty/Institute/Others: Faculty of Electrical Engineering

Department:

Pass through the study plan: Open Informatics - Human-Computer Interaction

Branch of study guaranteed by the department: Welcome page

Guarantor of the study branch:

Program of study: Open Informatics

Type of study: Follow-up master full-time

Note on the pass:

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 |
|-------------|---|------------------|------------------|---------|----------|------|
| BEZM | Safety in Electrical Engineering for a master's degree Vladimír K la, Radek Havlí ek, Ivana Nová, Josef ernohous, Pavel Mlejnek Radek Havlí ek Vladimír K la (Gar.) | Z | 0 | 2BP+2BC | Z | P |
| B4M33PAL | Advanced algorithms Marko Genyk-Berezovskyj, Daniel Pr ša, Ond ej Drbohlav Daniel Pr ša Daniel Pr ša (Gar.) | Z,ZK | 6 | 2P+2C | Z | P |
| B4M39NUR | User Interface Design Zden k Míkovec Zden k Míkovec Zden k Míkovec (Gar.) | Z,ZK | 6 | 2P+2S | Z | PO |
| B4M39PUR1 | Psychology in HCI Jakub Franc, Jan Balata Jakub Franc Jakub Franc (Gar.) | Z,ZK | 6 | 2P+2S | Z | PO |
| 2018_MOIVOL | Volitelné odborné p edm ty | Min. cours. 0 | Min/Max 0/999 | | | 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 |
|-------------|--|------------------|------------------|-------|----------|------|
| B4M35KO | Combinatorial Optimization Zden k Hanzálek Zden k Hanzálek Zden k Hanzálek (Gar.) | Z,ZK | 6 | 3P+2C | L | P |
| B4M01TAL | Theory of Algorithms Marie Demlová, Natalie Žukovec Marie Demlová Marie Demlová (Gar.) | Z,ZK | 6 | 3P+2S | L | P |
| B4M39PTV | Spatial Design Marian Karel, Adéla Bébarová Zden k Míkovec Zden k Míkovec (Gar.) | Z,ZK | 6 | 2P+2L | L | PO |
| B4M39VIZ | Visualization Ladislav molík Ladislav molík Ladislav molík (Gar.) | Z,ZK | 6 | 2P+2C | L | PO |
| 2018_MOIVOL | Volitelné odborné p edm ty | Min. cours. 0 | Min/Max 0/999 | | | 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 |
|----------|---|------------|---------|-------|----------|------|
| B4MSVP | Software or Research Project Ivan Jelínek, Jaroslav Sloup, Ji í Šebek, Martin Šipoš, Drahomíra Hejtmanová, Jana Zichová, Petr Pošík, Martin Hlinovský, Katarína Žmolíková, Ivan Jelínek Ivan Jelínek (Gar.) | KZ | 6 | | Z,L | P |
| B4M36SAN | Statistical Data Analysis Ji í Kléma Ji í Kléma Ji í Kléma (Gar.) | Z,ZK | 6 | 2P+2C | Z | PO |

| | | | | | | |
|-------------|--|------------------|------------------|-------|---|----|
| B4M36ZKS | Software Quality Assurance <i>Karel Frajták, Miroslav Bureš, Mat j Klíma Miroslav Bureš Miroslav Bureš (Gar.)</i> | Z,ZK | 6 | 2P+2C | Z | PO |
| 2018_MOIVOL | Volitelné odborné p edm ty | Min. cours. 0 | Min/Max 0/999 | | | 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) <i>Tutors, authors and guarantors (gar.)</i> | Completion | Credits | Scope | Semester | Role |
|-------------|---|------------------|------------------|-------|----------|------|
| BDIP25 | Diploma Thesis | Z | 25 | 22s | L | P |
| 2018_MOIVOL | Volitelné odborné p edm ty | Min. cours. 0 | Min/Max 0/999 | | | V |

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

| Kód | Name of the group of courses and codes of members of this group (for specification see here or below the list of courses) | Completion | Credits | Scope | Semester | Role |
|--------------------|---|------------------|------------------|-------|----------|------|
| 2018_MOIVOL | Volitelné odborné p edm ty | Min. cours. 0 | Min/Max 0/999 | | | V |

List of courses of this pass:

| Code | Name of the course | Completion | Credits |
|---|------------------------------|------------|---------|
| B4M01TAL | Theory of Algorithms | Z,ZK | 6 |
| The course brings theoretical background of the theory of algorithms with the focus at first on the time and space complexity of algorithms and problems, secondly on the correctness of algorithms. Further it is dealt with the theory of complexity; the classes P, NP, NP-complete, PSPACE and NPSPACE are treated and properties of them investigated. Probabilistic algorithms are studied and the classes RP and ZPP introduced. | | | |
| B4M33PAL | Advanced algorithms | Z,ZK | 6 |
| Basic graph algorithms and graph representation. Combinatorial algorithms. Application of formal languages theory in computer science - pattern matching. | | | |
| B4M35KO | Combinatorial Optimization | Z,ZK | 6 |
| The goal is to show the problems and algorithms of combinatorial optimization (often called discrete optimization; there is a strong overlap with the term operations research). Following the courses on linear algebra, graph theory, and basics of optimization, we show optimization techniques based on graphs, integer linear programming, heuristics, approximation algorithms and state space search methods. We focus on application of optimization in stores, ground transportation, flight transportation, logistics, planning of human resources, scheduling in production lines, message routing, scheduling in parallel computers. | | | |
| B4M36SAN | Statistical Data Analysis | Z,ZK | 6 |
| This course builds on the skills developed in introductory statistics courses. It is practically oriented and gives an introduction to applied statistics. It mainly aims at multivariate statistical analysis and modelling, i.e., the methods that help to understand, interpret, visualize and model potentially high-dimensional data. It can be seen as a purely statistical counterpart to machine learning and data mining courses. | | | |
| B4M36ZKS | Software Quality Assurance | Z,ZK | 6 |
| B4M39NUR | User Interface Design | Z,ZK | 6 |
| Students will get acquainted with the theory of human-computer communication and interaction (formal description of user interfaces, formal user models, the fundamentals of perception, cognition, and user information evaluation). | | | |
| B4M39PTV | Spatial Design | Z,ZK | 6 |
| Course aim is to evoke interest in shape, material and its spatial characteristic with help of sophisticated spatial tasks and studies. It is not intended to educate a sculptor or designer. Another aspect is to turn students' attention from restricted form of flat computer screens towards free real space and let them by means of basic techniques like drawing and modeling to create spontaneously. Students will be confronted with basic composition and form creation principles of Gestalt psychology. Student will verify knowledge gained by means of sophisticated composition tasks. This course will take place in the sculptural and design workshop of Faculty of Architecture. | | | |
| B4M39PUR1 | Psychology in HCI | Z,ZK | 6 |
| The aim of the course is that students will master all phases of the research process starting from initial planning up to the translation of their observations into innovative design concepts, so they are able to run applied research projects themselves. Overall the emphasis is laid on practitioner's approach and developing skills needed for adopting these technique in daily design practice across various domains. | | | |
| B4M39VIZ | Visualization | Z,ZK | 6 |
| In this course, you will get the knowledge of theoretical background for visualization and the application of visualization in real-world examples. The visualization methods are aimed at exploiting both the full power of computer technologies and the characteristics (and limits) of human perception. Well-chosen visualization methods can help to reveal hidden dependencies in the data that are not evident at the first glance. This in turn enables a more precise analysis of the data, or provides a deeper insight into the core of the particular problem represented by the data. | | | |
| B4MSVP | Software or Research Project | KZ | 6 |

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|---|--|---|----|
| BDIP25 | Diploma Thesis | Z | 25 |
| Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| BEZM | Safety in Electrical Engineering for a master's degree | Z | 0 |
| The course provides for students of all programs periodic training guidelines for health and occupational safety and gives knowledge of electrical hazard of given branch of study. Students receive indispensable qualification according to the current Directive of the Dean. | | | |

For updated information see <http://bilakniha.cvut.cz/en/f3.html>

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