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| Study programme: | Applied Informatics |
| Type of study / Form of study: | doctoral / full-time and part-time |
| Limit of credits: | 240 ECTS credits |
| Standard length of study: | 4 years |
| Validity of study plans: | from the academic year 2023/2024 |

Compulsory courses

| <i>Code</i> | <i>Course</i> | <i>ECTS credits</i> | <i>Format l-s</i> | <i>Type of exam</i> | <i>Recom. semester</i> | <i>Lecturer</i> |
|-------------|---|---------------------|-------------------|---------------------|------------------------|---------------------------------|
| FES/EMVPA | Science Methodology | 20 | 8-0-4 | ex | WS / 1 | Prof. Stejskal |
| FES/EPMMS | Advanced Statistical and Mathematical Methods in Data Science | 20 | 8-0-4 | ex | WS / 2 | Prof. Munk |
| FES/EMTMI | Modern Trends and Methods in Informatics | 20 | 8-0-4 | ex | SS / 1 | Assoc. Prof. Hub Prof. Čapek |

Credit evaluation (ECTS) of scientific-research activities (publications):

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| Publication in a journal with IF factor in Q1 and Q2 (indexed at WoK) | 40 |
| Book monographic publication (outside the Czech and Slovak Rep.) | 30 |
| Publication in a journal with IF factor in Q3 and Q4 (indexed at WoK) | 30 |
| Publication in the Scopus journal with SJR in Q1 and Q2 | 25 |
| Publication in a journal registered in the ESCI WoK database | 25 |
| Publication in the Scopus journal with SJR in Q3 and Q4 | 20 |
| Book monographic publication (inside the Czech and Slovak Rep.) | 20 |
| Publication in an index conference proceeding (WoK, Scopus) | 15 |
| Teaching text, text book/script | 10 |
| Publication in a reviewed non-index journal | 8 |
| Other scientific publication, presentation, performance (non-index conferences in Scopus or WoK databases, scientific journals etc.) | 5 |

Gaining ECTS credits related to scientific-research activities is conditioned by student's affiliation to the Faculty of Economics and Administration of the University of Pardubice. In case of co-authors, the number of credits is stipulated in compliance with the share of each author. If the share is not defined, the number of credits is divided by the number of authors. If a co-author is represented by a supervisor, the supervisor is excluded from sharing.

Compulsory options

| <i>Code</i> | <i>Course</i> | <i>ECTS credits</i> | <i>Format l-s</i> | <i>Type of exam</i> | <i>Recom. semester</i> | <i>Lecturer</i> |
|-------------|---|---------------------|-------------------|---------------------|------------------------|---------------------------------|
| FES/EDES | Digital Economy and Society | 10 | 4-0-8 | ex | LS / 2 | Assoc. Prof. Kopáčková |
| FES/EPMZ | Advanced Methods of Spatial Data Processing | 10 | 4-0-8 | ex | LS / 2 | prof. Komárková |
| FES/EPUR | Usability of User Interfaces | 10 | 4-0-8 | ex | LS / 2 | Assoc. Prof. Hub |
| FES/ETZID | Theory of Information and Data Security | 10 | 4-0-8 | ex | LS / 2 | Assoc. Prof. Hub Prof. Čapek |
| FES/EUVIA | Artificial and Computational Intelligence | 10 | 4-0-8 | ex | LS / 2 | Prof. Hájek |
| FES/EVVS | Research Seminar | 10 | 0-0-12 | ex | LS / 2 | supervisor |

Students choose at least two of the compulsory options.

Optional courses

| <i>Code</i> | <i>Course</i> | <i>ECTS credits</i> | <i>Format l-s</i> | <i>Type of exam</i> | <i>Recom. semester</i> | <i>Lecturer</i> |
|-------------|---|---------------------|-------------------|---------------------|------------------------|---------------------------------------|
| FES/EAWA | Architecture and Web Application Design | 5 | 4-0-4 | ex | WS / 3 | Assoc. Prof. Hub |
| FES/EDA | Data Analytics | 5 | 4-0-4 | ex | WS / 3 | Assoc. Prof. Šimonová |
| FES/EEGOV | e-Government | 5 | 4-0-4 | ex | WS / 3 | Assoc. Prof. Kopáčková Prof. Čapek |
| FES/EESYS | Experts Systems | 5 | 4-0-4 | ex | WS / 3 | Prof. Hájek |
| FES/EPMB | Advanced Business Intelligence Methods | 5 | 4-0-4 | ex | WS / 3 | Assoc. Prof. Šimonová |
| FES/ESU | Machine Learning | 5 | 4-0-4 | ex | WS / 3 | Prof. Hájek |
| FES/EDOS | Doctoral (Summer) School | 5-15 | | | | |

Students choose such number of optional courses, in compliance with a dissertation theme and supervisor's consent, to gain at least 180 ECTS credits in order to submit an application for the state doctoral exam. The minimum of 240 ECTS credits is required to complete the doctoral study successfully. Extra credits can be achieved based on fulfilment of other activities, such as scientific-research activities, internship, pedagogical activities, submission of a final dissertation thesis (please see below).

Internship requirements

Students are committed to experience an internship within the first three years of study. It can be held at a prestigious foreign university or a scientific-research institution for a minimum length of one month. The internship's length can be divided into several parts with a minimum duration of one week. The Internship may also take the form of participation in an European research project or other form of direct participation in international collaboration within an international collective of authors leading to an international output with a defined type of results (for example Jimp, Jsc, D, P) according to the current Register of Information on Results (RIV), and based on an appropriate regulation provided by the Council for Research, Development and Innovations (RVVI).

The internship should lead to deepening the doctoral student's scientific and methodological knowledge related to the dissertation topic. The consent of the supervisor and the chairman of the advisory board is required. When approving the internship, the supervisor primarily considers the professional focus of the visited institution. Upon completion of the internship, the student is required to prepare a report, which is submitted to the supervisor. Based on the report, the supervisor proposes a certain number of credits to the study programme guarantor to be granted to the student. Students gain from 20 to 60 ECTS credits based on the submitted relevant documents showing the quality of the achieved outcomes, where the number of credits allocated is decided by the relevant vice-dean in cooperation with the guarantor of the doctoral study programme.

Other study duties

1. Pedagogical activities

Participation in pedagogical activities is granted by 5 ECTS credits for 2 hours of teaching per week in one semester. A student can gain the maximum of 10 ECTS in one semester. During the whole study, a student can reach the maximum of 30 ECTS. A supervisor in collaboration with a head of the institute will specify the number of teaching hours for each student in compliance with requirements of a particular institute.

2. State doctoral exam

By the deadline for submission of the application for the state doctoral examination, a student is obliged to complete an internship at a selected foreign university or research institution in the minimum length of one month, and to complete all compulsory courses, selected compulsory options and optional courses, and to achieve at least 180 credits in all study and other obligations specified in a student's individual study plan.

The state doctoral exam has two parts:

- the first part is a doctoral thesis defence, in which a student demonstrates the ability to theoretically grasp and analyse problems related to a dissertation. In the treatise, the

student presents a current state of scientific knowledge, results of his/her research activities that have been processed or published so far, and his/her intention of further progress in preparation of the dissertation;

- in the second part of the state doctoral examination, a student answers two questions from the courses he/she has taken during his/her studies.

3. Defence of a dissertation (PhD thesis)

A student receives 40 ECTS credits for submitting a final version of a dissertation at the Department of Research and Development of the Faculty of Economics and Administration, University of Pardubice. Only a doctoral student who has successfully passed the state doctoral examination and has attained at least 240 credits in all study and other obligations stipulated in his/her individual study plan, and who submits a list of publications that includes at least one full-author publication in a journal with a non-zero impact factor or two full-author publications with a non-zero SJR value, may submit an application for defence of the dissertation; in case of co-authorship, the shares are cumulative. In this case, a publication produced by a student with his/her supervisor is also considered to be a full-author publication. In the dissertation defence, a doctoral candidate presents particularly the results of his/her scientific research work and the process by which he/she achieved these goals.

Explanatory notes

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| <i>code</i> | = <i>course abbreviation</i> |
| <i>format l-s</i> | = <i>lectures - seminars</i> |
| <i>type of exam: ex, Sdo</i> | = <i>examination , state doctoral exam</i> |
| <i>recom.semester / year</i> | = <i>recommended semester / year to take the course</i> |
| <i>WS / SS</i> | = <i>winter semester / summer semester</i> |