JAN EVANGELISTA PURKYNË UNIVERSITY IN ÚSTÍ NAD LABEM Faculty of the Environment

# **DEAN'S DIRECTIVE Č. 2/2024**

The organisation of studies in the joint doctoral programme *Environmental and Biomaterial Sciences* of the Faculty of Environment, Faculty of Science - Jan Evangelista Purkyně University in Ústí nad Labem and the Institute of Inorganic Chemistry of the Czech Academy of Sciences in cooperation with the Fraunhofer Institute for Ceramic Technologies and Systems Germany

In order to establish more detailed conditions for the organisation of studies in the joint doctoral study programme of the Faculty of Environment, Jan Evangelista Purkyně University in Ústí nad Labem, the Faculty of Science, Jan Evangelista Purkyně University in Ústí nad Labem and the Institute of Inorganic Chemistry of the CAS, v.v.i., the dean of the Faculty of Environment issues this directive. The directive implements and supplements the provisions resulting from the Study and Examination Regulations for Doctoral Study Programmes of the Jan Evangelista Purkyně University in Ústí nad Labem.

The website of the study programme *Environmental and Biomaterial Sciences* is <u>https://www.fzp.ujep.cz/ENVIBIO</u>

# Article 1

# Introductory provisions

1. Study in the doctoral study programme at the Faculty of Environment of the Jan Evangelista Purkyně in Ústí nad Labem is carried out in accordance with the Study and Examination Regulations for Study in the Doctoral Study Programmes of the Jan Evangelista Purkyně University in Ústí nad Labem, as amended.

2. Study in the doctoral study programme *Environmental and Biomaterial Sciences* (hereinafter referred to as the "ENVIBIO" is carried out at the Faculty of Environment of Jan Evangelista Purkyně University in Ústí nad Labem, the Faculty of Science of Jan Evangelista Purkyně University in Ústí nad Labem and the Institute of Inorganic Chemistry of the CAS, v.v.i. based on the joint accreditation of the programme.

3. The study in the doctoral study program is monitored and judged by the doctoral council of the doctoral study programme ENVIBIO. The council members are selected by the generally applicable regulations and the Partial Agreement on Cooperation in the Implementation of the

Doctoral Study Programmes concluded between the Faculty of Environment, the Faculty of Science and the Institute of Inorganic Chemistry of the CAS, v.v. (hereinafter referred to as the "Agreement"). Further details on the activities of the subject council are provided in the Dean's Directive on the Rules of Procedure of the Doctoral Council of the Doctoral Study Programme *Environmental and Biomaterial Sciences*.

#### Article 2

#### Admission procedure

1. Students are admitted to study at the Faculty of Environment of the Jan Evangelista Purkyně University in Ústí nad Labem based on the announced Conditions of Admission to Study in the Doctoral Study Programme for the relevant academic year.

2. The admission procedure is governed by the relevant provisions of Act No. 111/1998 Coll., on Higher Education Institutions and Amendments and Supplements to Other Acts as amended and the Study and Examination Regulations for Doctoral Study Programmes of the Jan Evangelista Purkyně University in Ústí nad Labem.

3. The doctoral council approves the draft Conditions for Admission to Study in the Doctoral Study Programme.

4. The list of dissertation topics for the admission procedure for the upcoming academic year will be published on the faculty's website <u>https://www.fzp.ujep.cz/ENVIBIO</u> and will be continuously updated. Students may propose their own topics in agreement with their supervisor and the programme chair.

#### Article 3

#### Supervisor, specialist supervisor and consultant

1. The duties of the supervisor are governed by the supervisor's standards according to the current Rector's directive Supervisor's Standards in Doctoral Study Programmes at Jan Evangelista Purkyně University in Ústí nad Labem.

2. The dean appoints the supervisor based on the proposal of the doctoral council of the doctoral study programme ENVIBIO. The doctoral council recommends the supervisor during the discussion of the proposals for dissertation topics or individually at the suggestion of a member of the doctoral council. For a newly proposed supervisor, the doctoral council assesses their competence.

3. Active researchers with sufficient teaching experience, who are recognised experts in their field and hold the title of professor or associate professor or scientific rank, are proposed for the position of supervisor.

4. For the position of supervisors are preferred employees of the Faculty of Environment, Faculty of Science of the Jan Evangelista Purkyně University in Ústí n. L., Institute of Inorganic Chemistry of the CAS, v.v. and Fraunhofer Institute for Ceramic Technologies and Systems IKTS (Germany). However, supervisors from other faculties of the Jan Evangelista Purkyně University in Ústí nad Labem as well as external supervisors from other institutions may be proposed and appointed if

they meet the general requirements and the focus of their work is in line with the field of study. In the case of external supervisors, the link with the training institute is also assessed.

5. In addition to the supervisor and in agreement with the supervisor, the dean may appoint one or more supervisor(s)-specialist(s) for a given dissertation. A supervisor/specialist is usually an expert in a particular field relevant to the topic of the thesis, or a specialist in a specific experimental technique, or a practitioner who provides consultation or methodological assistance to the student in their field of specialisation.

6. Upon the proposal of the supervisor, the dean may also appoint one or more consultant(s). The consultant(s) shall provide consultation or methodological assistance to the student(s) in certain sub-activities related to the elaboration of the dissertation.

7. Supervisor(s) and consultant(s) may participate in the evaluation of the student in collaboration with the supervisor, but the supervisor is fully responsible for the guidance and evaluation of the student.

#### Article 4

#### Organisation and course of study

1. Four years of the doctoral study program at the Faculty of Environment, Jan Evangelista Purkyně University in Ústí nad Labem is standard. The maximum study period is seven years. If a student does not complete their studies properly within the maximum period of the study, their studies shall be terminated pursuant to Section 56(1)(b) of Act No. 111/1998 Coll., on Higher Education and on Amendments and Additions to Other Acts as amended. The decision-making procedure in this matter shall be governed by Section 68 of the Act.

2. Doctoral studies at the Faculty of Environment, Jan Evangelista Purkyně University in Ústí nad Labem are conducted only in full-time form.

3. The course of study is governed by annual individual study plans (hereinafter referred to as "ISP"). ISP is prepared by the student in cooperation with the supervisor.

4. The ISP is detailed for the first academic year and the framework for the following years. The ISP is specified and its implementation is checked (see Article 5 below) in the Annual Evaluation of the ISP. The student(s) writes down the obligations set out in the ISP for the following academic year in the form of electronic registration of courses in the UJEP Study agenda information system (hereinafter referred to as "IS/STAG"). The electronic registration of courses follows immediately after the approval of the ISP by the doctoral council. The ISP forms are listed in Annex 1 to this directive.

5. The rules for compiling the ISP are set out in Annex 2 to this Directive.

6. Participation in lectures and seminars, conferences, workshops, self-study and self-study, independent research work of the student, presentation of the work results, etc. is a compulsory part of the study. Students are expected to participate in the field seminar, lectures by invited experts, recommended courses focused on various aspects of scientific work, soft skills, etc. Active participation in these forms of teaching is the subject of the ISP performance evaluation.

7. Participation in a foreign internship and publishing activities is a mandatory part of the study.

8. The head of the department may, in agreement with the supervisor, determine other obligations of the student, including compulsory attendance at the department. The supervisor's approval is required when setting obligations beyond the given ISP.

# Article 5

#### Evaluation and control of the fulfilment of the individual study plan

1. Every year (by 20 August of the academic year at the latest), the student shall prepare a written report in duplicate on the results of their activities, which shall be one of the bases for the evaluation of the fulfilment of the ISP by the supervisor. The form for preparing the Annual Evaluation of the Performance of the ISP in the doctoral study programme (Part A) is given in Annex 3 to this Directive.

2. The supervisor shall evaluate the fulfilment of the ISP in a given year and prepare a report (Part B of the Annual Evaluation of the fulfilment of the ISP in the doctoral programme form in Annex 3). The supervisor will discuss this evaluation with the student.

3. The supervisor shall submit the report on the fulfilment of the ISP to the chair of the doctoral council or the secretary of the doctoral council no later than 10 September of the academic year.

4. The chair of the doctoral council shall ensure that the reports on the results of the ISP implementation are discussed by the doctoral council and the reviewed reports are submitted to the dean of the faculty for signature.

5. The fully assessed and signed annual evaluation of the ISP in the doctoral study programme will be forwarded to the doctoral study programme officer, who will file one copy in the student's folder and deliver the other to the student.

6. A student will meet the conditions for advancement **to the second year of study** if they earn **at least 45 credits** for the courses enrolled in the first year of study.

7. The student will meet the conditions for advancement **to the third year of study** if they obtain **at least 100 credits** for the courses enrolled in the first and second year of study.

8. the student will meet the requirements for advancement to **the fourth year** of study if they obtain **at least 150 credits** for courses taken in the first to third year of study.

9. The evaluation of the study in the courses ending with examination is "pass" or "fail". Each examination may be repeated no more than twice. The lecturer enters the result of the examination in the IS/STAG. The lecturer is obliged to make the entry in the STAG system within 5 days after the examination.

10. The evaluation of the study of courses ending with credit is "credited" or "not credited". The award or non-award of credit is entered by the lecturer or the supervisor in IS/STAG. The lecturer is obliged to make the entry in IS/STAG within 5 days after the award/non-award of credit.

#### Article 6

#### Orderly completion of studies

# A) State Doctoral Examination

1. State doctoral examination is held in English.

2. Student may take the state doctoral examination after completing the compulsory number of courses in categories B, C and D prescribed in their study plan.

3. Student has to demonstrate mastery of theories and acquisition of the required knowledge and skills in the areas of study, including methodological foundations of scientific work and creative procedures. Its content is based mainly on the dissertation topic and the student's individual study plan.

4. The state doctoral examination consists of thematic topics based on two selected courses from Block B.

5. Topics for each subject are determined individually by the doctoral council in cooperation with the supervisor, considering the dissertation topic.

6. The date of the state doctoral examination is proposed by the doctoral council and set by the dean individually based on the application for the state doctoral examination. The application form for the state doctoral examination is given in Annex 4 to this Directive.

7. The state doctoral examination is held before an examination committee appointed by the dean on the proposal of the doctoral council in accordance with the Agreement, the Study and Examination Regulations for Study in the Doctoral Study Programmes of the Jan Evangelista Purkyně University in Ústí nad Labem and the relevant provisions of the Higher Education Act. The Ministry of Education, Youth and Sports may appoint additional members of the examination commission from among the prominent experts in the given field

8. The examination committee shall consist of at least five members, i.e. a chairperson and at least four members. The supervisor shall be a member of the committee. The presence of at least three-fifths of the committee members, including the chairperson, is required to conduct the state doctoral examination.

9. Chairperson of the examination committee shall preside over the proceedings of the examination committee. The committee proceedings shall be open to the public except for the classified evaluation and voting. In a closed session, the committee shall evaluate the conduct of the state doctoral examination and decide by vote on its classification. The vote on classification shall be secret.

10. State doctoral examination is classified as pass or fail. A majority vote of all members of the examination committee present is required to achieve a pass/fail classification. If the student is classified as a failing student in the state doctoral examination, a justification shall be entered in the record and communicated to the student.

11. If a student fails to appear for the state doctoral examination without an excuse, or their excuse is not accepted, they are considered to have failed the examination. The excuse shall be submitted within one week of the relevant date of the state doctoral examination to the dean, who shall make a final decision on accepting the excuse.

12. A student may take the state doctoral examination no more than twice; no extraordinary makeup state doctoral examination dates are permitted. If the student fails to take the state doctoral examination even in the remedial term, they shall be subject to termination proceedings under section 56(1)(b) of the Act. The procedure for deciding on this matter shall be governed by Section 68 of the Act.

# B) Dissertation and its defence

1. The study in the doctoral study programme shall be completed by preparing a dissertation in English and its defence, which shall be subject to the prior passing of the state doctoral examination. The dissertation must present original results in the given field. The results of the thesis or parts thereof must be published - the publication requirements are specified in the study programme.

2. Guidelines for the dissertation preparation are in the Dean's Directive Recommended Guidelines for the Preparation of the Dissertation Thesis and its supplement (referred as "teze" in the Czech version of the directive). We prefer version A for the dissertation; "teze" is not required.

3. The student prepares **an electronic version** of the dissertation and submits it to the study department of the Faculty of Environment, Jan Evangelista University in Ústí nad Labem, together with the application for public defence and enters the topic of the dissertation on the IS/STAG portal in the application "My studies/Topics of qualifying theses". The study department will prepare the Dissertation Assignment, which will be inserted into the final printed version and will be part of the final electronic version of the dissertation.

4. On the proposal of the doctoral council, the dean appoints at least three opponents whose task is to prepare a dissertation review.

5. The opponent(s) shall be eminent experts in the relevant scientific field. The opponent(s) may not be the student's supervisor, supervisor-specialist or consultant, nor persons who have participated in the dissertation preparation or part of it as co-authors or have made other significant contributions to the work.

6. The opponent(s) will prepare their report within 6 weeks from the appointment date. If the opponent(s) fails to produce an opinion within the given deadline, the dean may appoint another opponent(s).

7. The student will prepare written answers to the opponents' opinions within 3 weeks after receiving all the opponents' written reports and will incorporate them together with the comments of the opponents into the dissertation. A dissertation that has already incorporated the opponents' opinions is considered the final version and is printed.

8. Before submitting the printed dissertation, the author of the dissertation is obliged to save the **final version of dissertation** in the database of University Qualification Theses of UJEP, which is a part of IS/STAG. The electronic version of the dissertation saved in IS/STAG must consist of one file in PDF format. The method of submission and the rules of publication of qualification theses are defined in the current directive of the Rector of UJEP "On the publication of theses".

9. The supervisor is obliged to check the submitted thesis for possible plagiarism in the THESES system prior to the dissertation defense. The supervisor is obliged to comment in writing on any non-zero degree of conformity found in their opinion on the submitted thesis. Based on the supervisor's opinion, the supervisor or the authorised person is obliged to conclude the evaluation

of the thesis by setting the parameter "assessed - no plagiarism"/"assessed - plagiarism" in IS/STAG. Suppose the thesis is assessed with the parameter "assessed - plagiarism" in IS/STAG. In that case, the thesis must not be admitted for defense and the head of the relevant department is responsible for submitting a written initiative to initiate disciplinary proceedings.

10. The dissertation defence is held in English before a committee appointed by the dean of the faculty on the proposal of the doctoral council. The committee shall be composed of at least five members; the presence (physical or online) of at least three-fifths of the committee members, including the chairperson, and the personal presence of at least one of the opponent(s) is required for the defence to take place. The committee members are selected according to the generally applicable regulations and the Agreement. At least two members of the committee are not employees of either the Faculty of Environment, Jan Evangelista Purkyně University in Ústí nad Labem, nor Faculty of Science of the Jan Evangelista Purkyně University in Ústí nad Labem, or the Institute of Inorganic Chemistry of the CAS, v.v.i. The supervisor is not a committee member, but they may participate in the meeting, including the closed part of the defence. Opponents may be members of the committee. If they are not committee members, they participate in the meeting, including the closed part of the defence.

11. The usual course of the public part of the defence is as follows:

- The chairperson or another committee member or the supervisor introduces the student.

- The supervisor briefly reviews the course of study.

- The student will present the basic thesis of their thesis and the results achieved.

- The opponents will inform the audience of the content of their reports (the student is familiar with the reports in advance). If the opponent(s) is/are not present, the chairperson or another committee member will read the report in full.

- The student responds to the opponent(s)' or supervisor's evaluation and the opponent(s)' comments and discusses why they were or were not incorporated into the dissertation's final version. The student's written responses are also used as a basis.

- This is followed by a discussion of the dissertation in which anyone present may participate.

12. At the end of the public part of the defence, a secret ballot of the defence committee will take place, excluding the public. The final evaluation is pass/fail. A supermajority of the committee member(s) present must vote to successfully defend the dissertation. In the event of a tie (committees with an even number of members), the committee chairperson has the casting vote.

13. The defence committee chairperson shall announce the vote result at the continuing public meeting. Minutes of the deliberations of the defence committee and the vote shall be taken and signed by the chairperson and the members of the defence committee present.

14. Upon successful defence of the dissertation, the student shall be awarded the academic degree of "Doctor" (abbreviated "PhD" after their name).

15. In the event of an unsuccessful public defence of the dissertation, the student may repeat it after completing the dissertation. The public defence may be repeated only once, at the earliest in six months and the latest within one year from the date of the unsuccessful defence. An extraordinary revision of the public defence is not permitted. If a student fails to defend their

dissertation even when repeated, they shall be subject to termination proceedings under Section 56 (1) (b) of the Act. The procedure for deciding on this matter shall be governed by Section 68 of the Act.

16. If the dissertation is found to violate the basic principles of the ethics of independent work (in particular, the intentional unauthorised use of another person's work in gross violation of the legislation governing the protection of intellectual property pursuant to Section 47c (2) of the Act, preparation by another person), disciplinary proceedings will be initiated against the student. The defence of such work is not allowed.

#### **Final provisions**

(a) This Directive becomes effective on October 1, 2024.

(b) The provisions of the Study and Examination Regulations are not affected by this Directive.

Prepared by: doc. Ing. Jiří Orava, Ph.D.

In Ústí nad Labem on September 30, 2024

doc. Dr. Ing. Pavel Kuráň, dean of the Faculty of Environment

JAN EVANGELISTA PURKYNĚ UNIVERSITY IN ÚSTÍ NAD LABEM



Annex No. 1A

# Individual Study Plan of a Doctoral Programme

# Part A: Framework layout of the study for the expected period of education<sup>1</sup>

Student (name&surname including academic degrees):

Student's personal number:

Study programme:

Environmental and Biomaterial Sciences

Workplace of student:

Supervisor:

Workplace of supervisor:

Start of the study:

The expected end of the study:

Topic(s) and thesis of dissertation (working title):

Planned goals, main ideas of the dissertation:

<sup>&</sup>lt;sup>1</sup> Standard period of study is 4 years.

#### Consultant, Supervisor-specialist:

# Framework layout of the study programme Environmental and Biomaterials Sciences:<sup>2</sup>

#### 1st year:

Abbreviation	Title	Credits	Lecturer

#### 2nd year:

Abbreviation	Title	Credits	Lecturer

#### 3rd year:

Abbreviation	Title	Credits	Lecturer

#### 4th year:

Abbreviation	Title	Credits	Lecturer

<sup>&</sup>lt;sup>2</sup> Please include a detailed plan for the first year of study. Details of the following years of study will be specified in the study course's annual evaluation document.

Internships, trainings at other workplaces, conferences:

Other study obligations:

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Student's signature

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Supervisor's signature

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Signature of the chair of the doctoral council

Dean´s signature

Approved by the doctoral council on:



Annex No. 1 B

### Individual Study Plan of a Doctoral Programme

#### Part B: A detail study plan for the academic year .....

Student (name&surname including academic degrees):

Student's personal number:

Year of study:

Study programme: Environmental and Biomaterial Sciences

Supervisor:

The topic of the dissertation thesis:

Abbrevi ation	Title	Credits	Expected date of exam	Finished	Lecturer		
Mandato	ry-optional courses						
Mandato	Mandatory courses						

Other duties (internships, attendance at conferences, etc.) will be listed in the Annex as appropriate.

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Student's signature

Supervisor's signature

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I Dean's signature

Signature of the chair of the doctoral council

Approved by the doctoral council on:

#### Annex No. 2

Study plane of the doctoral study programme *Environmental and Biomaterial Science* - General overview of courses and their division

	ENVIRONMENTAL AND BIOMATERIAL SCIENCES							
A. Povinné kurzy (Compulsory courses)	B. Povinně volitelné teoretické kurzy (Compulsory optional courses)	C. Povinně volitelné praktické kurzy (Specialized laboratories and practicals)	D. Povinně volitelné doplňkové kurzy (Optional courses)					
Conference participation	Advances in biotechnology	Laboratory I – Cleanroom	Climate change: Influencing factors and impacts on ecosystem services					
Doctoral seminar I, II, and III	Advanced biophysical methods in nanomaterial research	Laboratory II – Circular chemistry	High-energy X-ray (synchrotron-based X- ray) analyses					
International internship	Advances in the application of analytical techniques	Laboratory III – ISO certified analytical measurements	Life-cycle assessment – Sustainable and eco- informed selection of materials					
Publication and dissemination	Advances in the characterization techniques of materials	Laboratory IV – Advanced microscopy of materials	Mitigation of pollution and toxicity in the environment					
Thesis preparation I, II, III, and IV	Chemistry and physics of surfaces and interfaces	Laboratory V – Synthesis of emerging inorganic materials	Molecular and cell biology for material research					
Workshop/summer school	Hydrodynamics	Laboratory VI – Synthesis of emerging organic materials	Principles of circular economy					
	Ion-beam synthesis and radiation testing of materials for energetic applications	Laboratory VII – Biomedical and immunology testing	Professional and academic German for scientists					
	Luminescence: From molecules to nanoparticles	Laboratory VIII – Application-oriented testing of materials						
	Magnetic properties of functional materials	Laboratory IX – Computational modelling of particle materials and fluid dynamics						
	Materials and living systems Materials and principles							
	of energy storage and conversion Materials for tissue engineering and medical							
	use Materials modelling Materials under extreme							
	conditions Microbiology in material research							
	Porous materials Powders and granular materials							

#### A. COMPULSORY COURSES

Name of Subject	Subject code	Method of verif.	Credits	Guarantor and Lecturer(s)	Reco mmen ded year
Conference participation	1COPA	Zp	10	lecturer	1-4
Doctoral seminar I, II, and III	1DOS1 1DOS2 1DOS3	Zp	10 10 10	<b>doc. Ing. Jiří Orava,</b> <b>Ph.D.,</b> Ing. Daniel Bůžek, Ph.D., Ing. Tadeáš R. Wangle, Ph.D.	1, 2, 3
International internship	1ININ	Zp	20	lecturer	1-3
Publication and dissemination	1PUBD	Zp	25	lecturer	2-4
Thesis preparation I, II, III, and IV	1TP1 1TP2 1TP3 1TP4	Zp	15 15 20 25	lecturer	1-4
Workshop/summer school	1WOSS	Zp	10	lecturer	1-3

#### **B. COMPULSORY OPTIONAL COURSES**

Name of Subject	Subject code	Method of verif.	Credits	Guarantor and Lecturer	Reco mme nded year
Advances in biotechnology	1ADBI	Zk	20	Dr. rer. nat. Jörg Opitz	1-2
Advanced biophysical methods in nanomaterial research	1ABNR	Zp, Zk	20	<b>MSc. Dominika</b> <b>Wrobel, Ph.D.</b> , Mgr. Jan Malý, Ph.D., doc. Ing. Josef Trögl, Ph.D.	1-2
Advances in the application of analytical techniques	1AAAT	Zk	20	doc. Dr. Ing. Pavel Kuráň, Mgr. Jakub Ederer, Ph.D., Ing. Lucie Oravová, Ph.D., Ing. Ivana Barchánková, Ph.D., prof. Ing. Pavel Janoš, CSc.	1-2
Advances in the characterization techniques of materials	1ACTM	Zk	20	doc. Ing. Jiří Orava, Ph.D., prof. Spyros N. Yannopoulos, doc. Ing. Martin Kormunda, Ph.D., doc. RNDr. Stanislav Daniš, Ph.D., Mgr. Jakub Ederer, Ph.D., Ing. Jiří Henych, Ph.D., Dr. Ing. Birgit Jost, Ing. Kamil Lang, CSc., DSc.	1-2

Chemistry and physics of surfaces and interfaces	1CPSI	Zk	20	<b>prof. Ing. Zdeňka</b> Kolská, Ph.D., Dr. rer. nat. Mgr. Jiří Novák	1-2
Hydrodynamics	1HYDD	Zk	20	doc. Ing. Jaromír Havlica, Ph.D.	1-2
lon-beam synthesis and radiation testing of materials for energetic applications	1IONB	Zk	20	<b>prof. RNDr. Anna</b> <b>Macková, Ph.D.</b> , Ing. Jan Kameník, Ph.D.	1-2
Luminescence: From molecules to nanoparticles	1LUMI	Zk	20	Ing. Kamil Lang, CSc., DSc.	1-2
Magnetic properties of functional materials	1MPFM	Zk	20	doc. RNDr. Stanislav Daniš, Ph.D.	1-2
Materials and living systems	1MALS	Zp, Zk	20	<b>Mgr. Jan Malý Ph.D.</b> , Mgr. Marcel Štofik, Ph.D.	1-2
Materials and principles of energy storage and conversion	1MAPE	Zk	20	doc. Ing. Jiří Orava, Ph.D., prof. Ing. Tomáš Wágner, DrSc., Ing. Tadeáš R. Wangle, Ph.D., prof. Ing. Pavel Janoš, CSc., prof. Spyros N. Yannopoulos	1-2
Materials for tissue engineering and medical use	1MATM	Zp, Zk	20	Mgr. Olga Šebestová Janoušková Ph.D., MSc. Dominika Wrobel, Ph.D., Mgr. Jan Malý, Ph.D., Ing. Stanislav Vinopal, Ph.D., Mgr. Michaela Liegertová, Ph.D.	1-2
Materials modelling	1MAMO	Zk	20	doc. RNDr. Marek Malý, Ph.D.	1-2
Materials under extreme conditions	1MAEX	Zk	20	<b>Ing. Anna Knaislová,</b> <b>Ph.D.</b> , Ing. Tadeáš R. Wangle, Ph.D.	1-2
Microbiology in material research	1MICR	Zp, Zk	20	prof. RNDr. Milan Gryndler, CSc.	1-2
Porous materials	1POMA	Zk	20	RNDr. Jan Demel, Ph.D.	1-2
Powders and granular materials	1PGMA	Zk	20	doc. Ing. Jaromír Havlica, Ph.D.	1-2

# C. SPECIALIZED LABORATORIES AND PRACTICALS

Name of Subject	Subject code	Method of verif.	Credits	Guarantor and Lecturer	Reco mme nded year
Laboratory I – Cleanroom	1LAB1	Zp, Zk	20	Mgr. Marcel Štofik, Ph.D.	1-2
Laboratory II – Circular chemistry	1LAB2	Zp	20	<b>doc. Dr. Ing. Pavel</b> <b>Kuráň</b> , Ing. Ivana Barchánková, Ph.D.,	1-2

				Ing. Lucie Oravová, Ph.D.	
Laboratory III – ISO certified analytical measurements	1LAB3	Zp	20	Ing. Jitka Tolaszová, Ph.D.	1-2
Laboratory IV – Advanced microscopy of materials	1LAB4	Zp, Zk	20	Ing. Stanislav Vinopal, Ph.D., MSc. Dominika Wrobel, Ph.D., Mgr. Marcel Štofik, Ph.D., doc. Ing. Jiří Orava, Ph.D.	1-2
Laboratory V – Synthesis of emerging inorganic materials	1LAB5	Zp	20	Mgr. Jan Hynek, Ph.D.	1-2
Laboratory VI – Synthesis of emerging organic materials	1LAB6	Zp	20	RNDr. Karel Škoch, Ph.D.	1-2
Laboratory VII – Biomedical and immunology testing	1LAB7	Zp	20	RNDr. Mgr. Ing. Petr Kelbich, Ph.D.	1-3
Laboratory VIII – Application-oriented testing of materials	1LAB8	Zp	20	Dr. Ing. Birgit Jost	1-2
Laboratory IX – Computational modelling of particle materials and fluid dynamics	1LAB9	Zp, Zk	20	doc. Ing. Jaromír Havlica, Ph.D.	1-2

#### D. OPTIONAL COURSES

The student must complete all of them to the minimum extent, but can complete some of them to a higher extent for extra credits.

Name of Subject	Subject code	Method of verif.	Credits	Guarantor and Lecturer	Reco mme nded year
Climate change: Influencing factors and impacts on ecosystem services	1CLCA	Zk	10	Karim Al Souki, Ph.D.	1-2
High-energy X-ray (synchrotron-based X-ray) analyses	1XRAY	Zk	10	<b>Ing. Miloš Krbal, Ph.D.</b> , doc. RNDr. Stanislav Daniš, Ph.D.	1-2
Life-cycle assessment – Sustainable and eco- informed selection of materials	1LICY	Zk	10	Katrien Boonen, MSc.	1-2
Mitigation of pollution and toxicity in the environment	1MIT1	Zk	10	doc. Ing. Pavel Krystyník, Ph.D.	1-2
Molecular and cell biology for material research	1МСВМ	Zp, Zk	10	Ing. Stanislav Vinopal, Ph.D., Mgr. Olga Šebestová Janoušková Ph.D., prof. RNDr. Milan Gryndler, CSc.	1-2

Principles of circular economy	1PCIE	Zk	10	doc. Dr. Ing. Pavel Kuráň	1-2
Professional and academic German for scientists	1PGER	Zk	10	Mgr. Martina Nesládková, M.A.	1-2

**E. ANY OTHER SUBJECT.** The student may, in agreement with the supervisor, choose any other subjects from the offer of UJEP and other universities, especially from compatible study programmes. The credit evaluation is decided by the supervisor and approved by the departmental board within the individual study plan.

# State examination and dissertation defence

Name of Subject	Subject code	Method of verif.	Credits	Guarantor and Lecturer	Reco mme nded year
Advances in biotechnology		SDZ		Examination committee	4
Advanced biophysical methods in nanomaterial research		SDZ		Examination committee	4
Advances in the application of analytical techniques		SDZ		Examination committee	4
Advances in the characterization techniques of materials		SDZ		Examination committee	4
Chemistry and physics of surfaces and interfaces		SDZ		Examination committee	4
Hydrodynamics		SDZ		Examination committee	4
Ion-beam synthesis and radiation testing of materials for energetic applications		SDZ		Examination committee	4
Luminescence: From molecules to nanoparticles		SDZ		Examination committee	4
Magnetic properties of functional materials		SDZ		Examination committee	4
Materials and living systems		SDZ		Examination committee	4
Materials and principles of energy storage and conversion		SDZ		Examination committee	4
Materials for tissue engineering and medical use		SDZ		Examination committee	4
Materials modelling		SDZ		Examination committee	4
Materials under extreme conditions		SDZ		Examination committee	4
Microbiology in material research		SDZ		Examination committee	4
Porous materials		SDZ		Examination committee	4
Powders and granular materials		SDZ		Examination committee	4
Disertation defence	1DTD	SZZ		Examination committee	4

\* The student selects two subjects from which the doctoral council compiles and approves a thematic set of questions.

# Rules for drawing up an Individual Study Plan (ISP)

Study plans are determined individually; the mandatory structure of the ISP:

- Credits from compulsory courses (A): 170
- Credits from compulsory optional courses (B): min. 40
- Credits from specialised laboratories and practicals (C): min. 20
- Credits from optional courses (D): min. 10
- A minimum of 240 credits must be obtained for the study

The ISP is proposed by the supervisor in consultation with the student and approved by the doctoral council. The course content, method of completion, method of evaluation, etc. are given in the IS/STAG portal. 240 credit points must be obtained for the study. The review of the "Dissertation preparation" courses is usually carried out once a year in the form of a presentation of the results achieved by the student in front of the professional public and appointed representatives of the Faculty of Environment Doctoral Council (e.g. at the so-called Doctoral Seminar).



Annex No. 3

# Annual Evaluation of the Individual Study Plan of a Doctoral Programme in the Academic Year:

Student (name&surname, academic degrees):

Student's personal number:

Year of study:

Study programme: Environmental and Biomaterial Sciences

Supervisor:

The topic of the dissertation thesis:

#### Part A: written by the student

#### 1. Fulfilment of ISP

	Title	Credit	Expected date	Finished	Lecturer
Abbreviat			of exam		
ion					
Courses	;				

Commentary (please state any amendments, etc.):

2. Pedagogical activities (teaching in courses, conducting exercises, conducting BP/DP, etc.):

3. Preparation of the dissertation (brief description and evaluation of the work done and plan for the next year, the estimated horizon for submission of the application for the state doctoral examination and submission of the dissertation):

4. Participation in conferences and other ways of presenting research results, including professional publications (only related to the dissertation topic, with a brief indication of the contribution and nature of own work):

5. Internships and study stays, specialised courses not included in the ISP, etc.:

6. Participation in projects (role in the research team):

Part B: Supervisor's commentary

Evaluation of the ISP (agreement/disagreement with the above statements; comments predominantly on the progress of doctoral thesis):

Suggestions for modification of the ISP:

CONCLUSION: Based on the evaluation, I RECOMMEND/DON'T RECOMMEND to continue studying according to the original study plan.

Ústí nad Labem, date

Student's signature

Supervisor's signature

Signature of the chair of the doctoral council

Dean's signature

Discussed by the doctoral council on:

The doctoral council AGREES/DISAGREES with the supervisor's recommendation (in case of disagreement, give reasons).



Annex No. 4

#### Application for the State Doctoral Examination

Name, surname, titles: Student's personal number: Date and place of birth: Contact address incl. ZIP Code Contact (phone, email):

Study programme: Environmental and Biomaterial Sciences

Title of dissertation:

Supervisor (name and workplace/department):

Application submitted on

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Student's signature

The Doctoral Studies Officer of the Faculty of Environment confirms that the student has passed the examinations for all courses prescribed in their individual study plan.

YES/NO

stamp and signature