

FORMAL REQUIREMENTS AND ADMINISTRATION OF DOCTORAL STUDIES

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PhD programme: **Physical geography (Fyzická geografie)**

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General outline:

- **Semesters 1–4 (first 2 years of study)** - students work on their research project + fulfil other requirements (theoretical courses, teaching assistance)
- **Semesters 5–6 (third year of study)** - students work on their research project (incl. publications, presentations at conferences, etc.) + present Baselines of the PhD thesis and prepare for the state doctoral exam (SDE)
- **Semesters 7–8 – (fourth year of study)** - main focus on research (finishing doctoral project and thesis, publications, presentations at conferences, etc.) + submission of PhD thesis for defence

General requirements for all students in the programme (please see detailed requirements for the Individual Study Plan in the detailed table below):

Mandatory courses: *checked by Dean's Office*

ZD011–ZD018	Ph.D. thesis / Příprava dizertační práce	<i>each semester 15 ECTS (120 ECTS during the standard time)</i>
ZD161, ZD162, ZD163 ZD171, ZD172, ZD173	Geographical seminar / Oborový seminář z FG	<i>enrol course ZD161, ZD162, ZD163 (3 times) in spring semesters and course ZD171, ZD172, ZD173 (3-times) in spring semesters (12 ECTS)</i>
ZD001–ZD004	Teaching Assistance / Pomoc při výuce	<i>maximum 150 hours total for all studies during the first 4 semesters – ZD001–ZD004 (12 ECTS)</i>
ZD024 and ZD025	Lecture (ZD024) and poster (ZD025) in the foreign language / Přednáška (ZD024) a poster (ZD025) na mezinárodní konferenci v anglickém jazyce	<i>minimum once ZD024 (5 ECTS) and once ZD025 (3 ECTS)</i>
ZD026	Placement Abroad / Zahraniční pracovní pobyt	<i>Minimum 2 months stay, or 2 years collaboration on international project; min. once during studies (12 ECTS), requirement given by law</i> Instructions for recognition of Placement Abroad: https://www.sci.muni.cz/en/students/go-abroad/recognition-of-stay-abroad (the recognition is done via IS application Internship and Stays, by creating record of the stay and request for recognition; the course is then registered by Dean's Office)

Theoretical courses and all other requirements: *checked by the Guarantor*

- **Theoretical courses: minimum 5 courses in semesters 1–4 (36 ECTS)**
- **Publication of 3 scientific papers** – min. 1 first-author IF-journal paper (ZD021), 1 first-author SCOPUS-journal paper (ZD022), 1 co-authored reviewed paper (ZD023) (30 ECTS)
- **ZD010FG Baselines of PhD thesis / Teze dizertační práce** – defended before the end of Semester 6 (10 ECTS)

(*) Requirements for theoretical SDE:

Theoretical preparation for SDE (after semester 5). A student at the SDE demonstrates that he/she has mastered an in deep knowledge of Physical Geography, including appropriate techniques and skills. The aim is to examine both the level of knowledge and the ability to actively solve the specific scientific problem, including their complex understanding and application of corresponding analytical methods and synthesis. The defence of the Baselines of the Ph.D. thesis by an independent reviewer is a part of the state doctoral examination. The oral exam includes questions from the three testing areas:

- *General Physical Geography (components, processes, phenomena, holistic understanding of the Physical-geographical sphere)*
- *Methods of Physical-geographic research (data acquisition and evaluation, methods of their processing)*
- *Specific discipline from which the Ph.D. thesis is presented (methods, general knowledge, regional aspects, perspectives, scenarios, impacts)*

Elements of the ISP		Milestones and their check				
		Enrolment to studies (Before semester 1)	End of Semester 1	End of Semester 4	End of Semester 6 (Theoretical State Doctoral Exam, SDE *)	End of Semester 8 (Preparation for PhD defence)
(A) research and development activities (70 % of workload)	1. Research, dissertation project , literature search of the actual state of the topic, planning and the scientific activities itself (~55%)	Define framework topic of your PhD project with your supervisor for enrolment CHECK: Dean's office [enrolment] ZD011–ZD018 (15 ECTS each semester) CHECK: Dean's office	Submit detailed “research project” for your PhD work to the Doctoral Board. Max. 4 pages containing Background, Research hypothesis and objectives, Approach-methods, Timeline of foreseen activities, Expected publications. CHECK: Doctoral Board [Submitted project]	No formal check needed	Prepare “Baselines of the PhD thesis” ZD010FG (Max. 20 pages) with literature review (text may later be used as Introduction-Summary to final PhD thesis), state of the PhD project, results and planned publications. “Baselines” are reviewed by an independent reviewer (possibly one of the final PhD thesis reviewer). CHECK: Doctoral Board [ZD010, SDE assessment]	Submit PhD thesis according to instructions of Doctoral Board, format according to SCI MUNI requirements CHECK: Doctoral Board, Dean's office
	2. Publications (thesis should be based on 3 papers demonstrating quality and independence of the student (~12%))	No formal check needed	No formal check needed	No formal check needed	No formal check needed Publications of the student may be included in “Baselines” for SDE (if relevant)	Three papers - minimum criteria: One student's first-author paper published in IF-journal [ZD021]; one student's first-author paper

	<p>3. Presentation of results on scientific seminars, symposia, conferences etc., including preparation of talks and/or poster presentations (~3%)</p>	<p>No formal check needed</p>	<p>No formal check needed</p>	<p>No formal check needed</p>	<p>No formal check needed</p> <p>List of presentations may be included in “Baselines” for SDE (if relevant)</p>	<p>published in Scopus-journal [ZD022]; one co-authored reviewed paper [ZD023]. All papers at least in the state “accepted”.</p> <p>CHECK: Guarantor [ZD021–ZD023; Thesis]</p> <p>At minimum one oral presentation in English at international conference and at least one poster presentation at international conference</p> <p>CHECK: Doctoral Board [ZD024, ZD025]</p>
<p>(B) Specialized courses and theoretical preparation (20%)</p>	<p>4. Theoretical courses, preparation to the state doctoral exam – SDE (15%)</p>	<p>Enroll ZD150 Enroll 2 of the 6 Physical-geographical study areas (ZD151–ZD 156) Identify student’s knowledge gaps and what should be learned in 2 optional courses for the first four semesters. Consider courses at MU or outside. CHECK: Student, Supervisor</p>	<p>No formal check needed</p>	<p>Successfully pass 5 theoretical courses. CHECK: Dean’s office [IS.MUNI]</p>	<p>Have all other requirements fulfilled (see this column) and submit the application to SDE (Doctoral Board organizes SDE further)</p>	<p>Not relevant anymore, all requirements fulfilled before</p>

	5. Doctoral seminars (5%)	Enroll ZD161 (obligatory seminar) Enroll ZD171 (obligatory presentation seminar) CHECK: Student	No formal check needed	No formal check needed	Get credits for ZD161, ZD162, ZD163 (obligatory seminar for 3 spring semesters) and ZD171, ZD172, ZD173 (obligatory presentation seminar for 3 spring semesters) CHECK: Seminar teacher [ZD161, ZD162, ZD163, ZD171, ZD172, ZD173]	Not relevant anymore, all requirements fulfilled before
(C) International experience and competitiveness (5%)	6. Further improving of English competences (attending courses, seminars, conferences, writing publications, all in English).	No formal check needed	No formal check needed	No formal check needed	No formal check needed	At minimum one oral presentation in English at international conference and at least one poster presentation at international conference CHECK: Dean's office [ZD024, ZD025]
	7. Stay or internship abroad - mandatory participation in international cooperation (5%)	No formal check needed	No formal check needed	No formal check needed	No formal check needed	Minimum 2-months foreign stay, or 2-years collaboration on international project [ZD026] CHECK: Dean's office [ZD026]
(D) Pedagogical competences	8. Teaching assistance - classrooms, exercises, advising undergrad students and comparable.	Development of pedagogical experiences [ZD001–ZD004] – max. 150 hours through the first 4 semesters CHECK: Student	No formal check needed	Completed 4 semesters of “Development of pedagogical experiences”	Not relevant anymore, all requirements fulfilled before	Not relevant anymore, all requirements fulfilled before

				CHECK: Dean's office [ZD001–ZD004]		
(E) Other transferrable skills.	9. Career development - preparation and management of projects, scientific writing, communication, other soft-skills.	No formal check needed	No formal check needed	No formal check needed	No formal check needed	No formal check needed

Mandatory course

ZD150 Fundamentals of scientific work and preparation of scientific publications in Physical Geography

Recommended theoretical courses

ZD151 Geosphere (geomorphology and geology)

ZD152 Atmosphere (meteorology and climatology)

ZD153 Hydrosphere (hydrology, limnology and glaciology)

ZD154 Pedosphere (pedology, pedogeography)

ZD155 Biosphere (biogeography, (landscape) ecology)

ZD156 Development of natural systems (paleogeography, paleoclimatology, paleoecology)

