

**Charles University**  
**Faculty of Science**

**Study Plans**

2020/2021

UNIVERSITAS  
CAROLINA



Symbols listed in the study plans:

SZ1, SZ2, ... parts of the state examination

Indications for individual subjects:

[D] length of the course in days per semester

[H] length of the course in days per semester

[T] scope of the course in weeks per semester

[+3D] extra teaching (in addition to the above), here 3 days per semester

P the course has a prerequisite

K the subject has a corequisite

Z the subject has interchangeability

N the subject has an incompatibility

O the subject matter is repeatable

!! the course is not taught in the academic year 2020/2021

ob rok the course is taught every two years

## 7.37. Study program Ecology

*Guarantor of the study program: prof. Mgr. Lukáš Kratochvíl, Ph.D.*

**Study specializations:**

- Terrestrial ecology
- Hydrobiology

### Recommended study plan

**A.** Parts of the state examination are listed for individual specializations

**B.** The total amount of credits for general obligatory courses: **72**

**C.** The minimum amount of credits for general elective courses: **13** (6 + 2 + 5)

**D.** Conditions for students to be able to take the two parts of the state examination

**SZ1:** MDIPL003 (Diploma thesis)

- complete successfully all the obligatory courses
- obtain the minimum amount of credits in all the groups of elective courses
- obtain the minimum of 120 credits.

**SZ2:** codes and title are listed for individual specializations

- complete successfully all the obligatory courses with the exception of MB100C4 (Diploma project IV)
- obtain the minimum amount of credits in all the groups of elective courses

### General obligatory courses

Kód	Název	Výuka	Kr.	Dop. r.
MB160S01	Ecological seminar 1A	W 0/2 C	1	1.
MB100C1	Diploma project I	W 0/0 C	10	1.
MB162S03	Ecological seminar 1B	S 0/2 C	1	1.
MB100C2	Diploma project II	S 0/0 C	10	1.
MB162S04	Ecological seminar 2A	W 0/2 C	1	2.
MB100C3	Diploma project III	W 0/0 C	24	2.
MB162S05	Ecological seminar 2B	S 0/2 C	1	2.
MB100C4	Diploma project IV	S 0/0 C	24	2.

<b>Obligatory courses</b>	72
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**General elective courses**

Kód	Název	Rozsah	Kr.	Sem.
<b>Block 1 – Statistical and bioinformatics courses</b>				
MB120C15E	Flash R course <sup>N</sup>	0/4[D] C	2	W
MB120P147E	R for life <sup>N</sup>	1/1 C+Ex	2	W
MB120C16	Course of work with molecular data in R	0/4[D] C	2	W
MB170C47	UNIX and work with genomic data	0/3[D] C	2	W
MG440P44	Data analysis in R and Python	1/2 Ex	4	W
MB120P85	Community ecology. Introduction to ecological theory.	2/2 Ex	4	S
<i>Minimal credits: 6</i>				
<b>Block 2 – Journal Club</b>				
MB162S02	Journal Club in Ecology and Evolution 1A	1/0 C	1	W
MB162S07	Journal Club in Ecology and Evolution 1B	1/0 C	1	S
MB162S06	Journal Club in Ecology and Evolution 2A	1/0 C	1	W
MB162S08	Journal Club in Ecology and Evolution 2B	1/0 C	1	S
<i>Minimal credits: 2</i>				
<b>Block 3 – Terrain excursions and practices</b>				
MB162T09	Ichthyological field course	0/3[D] C	2	S
MB120T64	Field course in botany	0/1[T] C	3	S
MB120T97E	Field excursion 'Vegetation of the central Europe'	0/1[T] C	2	S
MB170T22	Specialized field course in Zoology	1/0[T] Ex	3	S
<i>Minimal credits: 5</i>				

**Recommended option courses**

Kód	Název	Rozsah	Kr.	Sem.
MB162P35	Basic bioacoustics	1/0 Ex	2	W
MB162S11	Vector graphics: a tool for science	0/3[D] C	2	W
MB162C05	Practical Course of Evolutionary Genetics and Genomics	0/5[D] C	4	W
MB120P132	Datahandling and numerical analyses in biostratigraphy	2/2 C+Ex	4	W
MB120P44	Use of molecular markers in plant systematics and population biol.	3/0 Ex	3	W
MB120C45E	Molecular markers in systematics and plant population biology II	0/1[T] C	3	S

MB120P177	<i>Transposable elements: from junk DNA toad to Prince Major Driver of biodiversity</i>	2/2 C+Ex	4	W
MB170P62	<i>Molecular Applications in Zoology</i>	2/0 Ex [+1D]	4	S

### 7.37.1. Specialization Terrestrial ecology

**Study advisor for the specialization: RNDr. Ondřej Sedláček, Ph.D.**

**A.** Parts of the state examination (topics are listed in SIS):

**SZ1:** MDIPL003 (Diploma thesis)

**SZ2:** MSZBN023 (Terrestrial Ecology)

**B.** The total amount of credits for specialized obligatory courses: **7**

**C.** The minimum amount of credits for specialized elective courses: **14** (6 + 8)

#### Specialized obligatory courses

Kód	Název	Výuka	Kr.	Dop. r.
MB120P113	Conservation Biology	S 3/0 Ex	4	1.
MB170P101	Macroecology	W 2/0 Ex	3	2.
<b>Obligatory courses</b>			<b>7</b>	

#### Specialized elective courses

Kód	Název	Rozsah	Kr.	Sem.
<b>Block 1 – Systematically oriented courses</b>				
MB160P06	<i>Crustacean biology and diversity<sup>ob rok</sup></i>	2/0 Ex	3	S
MB162P40	<i>Diversity of marine fishes</i>	2/0 Ex	3	S
MB162P09	<i>Ecology of Birds</i>	2/0 C+Ex	3	S
MB162P39	<i>Fish ecology</i>	2/0 Ex	3	S
MB162P26	<i>Insect ecology and conservation</i>	2/0 Ex	3	S
MB120P146	<i>Botany of non-vascular plants<sup>N</sup></i>	3/2 C+Ex	6	S
MB120P166	<i>Introduction to plant systematics, evolution and ecology</i>	2/0 Ex	3	W,S
MB120P170E	<i>Medical Mycology</i>	2/1 C+Ex	4	S
MB170P98	<i>Diversity of Insects</i>	2/0 Ex	3	W
MB160P66	<i>Parasitology</i>	2/0 Ex	3	W,S
<i>Minimal credits: 6</i>				
<b>Block 2 – Evolutionary ecological courses</b>				
MB162P24	<i>Biological Invasions</i>	2/0 Ex	3	W
MB162P11	<i>Ecological Developmental Biology and Evolution of Phenotype</i>	2/0 Ex	3	S
MB160P02	<i>Ecology of lentic ecosystems<sup>ob rok</sup></i>	2/0 Ex	3	W
MB162P30	<i>Ecology of the Cryosphere</i>	2/0 Ex	3	S
MB162P28	<i>Functional Community Ecology and Biogeography</i>	2/0 Ex	3	S
MB162P27	<i>Introduction to Polar Ecology</i>	2/0 Ex	3	W
MB162P31	<i>Stream Ecology<sup>ZN</sup></i>	2/0 Ex	3	W

MB120C14	Experimental plant ecology	1/2 C	4	S
MB120P165	Genomics of adaptation and speciation	2/2 C+Ex	4	S
MB120P22E	Methods in plant population biology	1/1 Ex	2	S
MB120P144	Plant breeding systems	2/2 C+Ex	3	S
MB120P172	Plant Epigenetics	2/4 C+Ex	4	W
MB120P94E	Population biology of plants	3/0 Ex	4	W
MB120P134	Quaternary palaeoecology	2/0 Ex	3	W
MB170P124	Basics of Evolutionary Biology <sup>N</sup>	2/0 Ex	3	W
MB170P106	Ethology and sociobiology	2/0 C+Ex [+1D]	5	W
MB170P84	Evolutionary and ecological immunology	3/0 C+Ex	4	W
Minimal credits: 8				

### 7.37.2. Specialization Hydrobiology

**Study advisor for the specialization: RNDr. Martin Černý, Ph.D.**

**A.** Parts of the state examination (topics are listed in SIS):

**SZ1:** MDIPL003 (Diploma thesis)

**SZ2:** MSZBN022 (Ecology — Hydrobiology)

**B.** The total amount of credits for specialized obligatory courses: **0**

**C.** The minimum amount of credits for specialized elective courses: **19** (6 + 13)

#### Specialized elective courses

Kód	Název	Rozsah	Kr.	Sem.
<b>Block 1 – Systematically oriented courses</b>				
MB160P06	Crustacean biology and diversity <sup>ob rok</sup>	2/0 Ex	3	S
MB162P38	Diatomology	1/3[D] C	3	S
MB162P40	Diversity of marine fishes	2/0 Ex	3	S
MB160P11	Ecology of Cyanobacteria and Algae	2/0 Ex	3	W
MB162P39	Fish ecology	2/0 Ex	3	S
MB160P55	Zooplankton Ecology	2/0 C	3	S
MB120P146	Botany of non-vascular plants <sup>N</sup>	3/2 C+Ex	6	S
MB120P166	Introduction to plant systematics, evolution and ecology	2/0 Ex	3	W,S
MB120T119	Marine phycology course	0/1[T] C	3	S
MB120P10	Phycology I	3/2 C+Ex	6	W
MB120P89	Phycology II	3/2 C+Ex	6	S
Minimal credits: 6				
<b>Block 2 – Evolutionary ecological courses</b>				
MB120P113	Conservation Biology	3/0 Ex	4	S
MB170P101	Macroecology	2/0 Ex	3	W
MB162P24	Biological Invasions	2/0 Ex	3	W
MB162P11	Ecological Developmental Biology and Evolution of Phenotype	2/0 Ex	3	S
MB160P02	Ecology of lentic ecosystems <sup>ob rok</sup>	2/0 Ex	3	W
MB162P30	Ecology of the Cryosphere	2/0 Ex	3	S

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<i>MB162P28</i>	<i>Functional Community Ecology and Biogeography</i>	<i>2/0 Ex</i>	<i>3</i>	<i>S</i>
<i>MB162P27</i>	<i>Introduction to Polar Ecology</i>	<i>2/0 Ex</i>	<i>3</i>	<i>W</i>
<i>MB162P31</i>	<i>Stream Ecology<sup>ZN</sup></i>	<i>2/0 Ex</i>	<i>3</i>	<i>W</i>
<i>MB120C14</i>	<i>Experimental plant ecology</i>	<i>1/2 C</i>	<i>4</i>	<i>S</i>
<i>MB120P165</i>	<i>Genomics of adaptation and speciation</i>	<i>2/2 C+Ex</i>	<i>4</i>	<i>S</i>
<i>MB120P22E</i>	<i>Methods in plant population biology</i>	<i>1/1 Ex</i>	<i>2</i>	<i>S</i>
<i>MB120P144</i>	<i>Plant breeding systems</i>	<i>2/2 C+Ex</i>	<i>3</i>	<i>S</i>
<i>MB120P172</i>	<i>Plant Epigenetics</i>	<i>2/4 C+Ex</i>	<i>4</i>	<i>W</i>
<i>MB120P94E</i>	<i>Population biology of plants</i>	<i>3/0 Ex</i>	<i>4</i>	<i>W</i>
<i>MB120P134</i>	<i>Quaternary palaeoecology</i>	<i>2/0 Ex</i>	<i>3</i>	<i>W</i>
<i>MB170P124</i>	<i>Basics of Evolutionary Biology<sup>N</sup></i>	<i>2/0 Ex</i>	<i>3</i>	<i>W</i>
<i>Minimal credits: 13</i>				

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