

#### 4. Program structure and learning outcomes

##### 4.1. Structure of the pedagogical component

The extent of the Pedagogical Component shall be 63 academic credits, including teaching practice. This component is common for all curricula in initial teacher education. The Pedagogical Component has been jointly created by all the involved universities in a collaborative design process. The component is flexible and leaves space for individual universities to implement it according to their specific situation and needs.

The overall structure of the pedagogical studies component:

Module name and main disciplines	Academic credits
<b>SUPPORTING LEARNERS AS INDIVIDUALS</b>	<b>17</b>
Psychology in education and Concepts of Interaction and Communication	4
Educational Science and Key Theories of Learning	3
Age and Physiological Features of the Development of Children	3
Inclusive Educational Environment	3
Teaching Planning and Individualization of Learning	4
<b>TEACHING AND ASSESSMENT FOR LEARNING</b>	<b>9</b>
Teaching Methods and Technologies	5
Assessment and Development	4
<b>TEACHER AS A REFLECTIVE PRACTITIONER</b>	<b>9</b>
Pedagogical Research	4
Research, Development and Innovation	5
<b>TEACHER AS A FACILITATOR OF LEARNING (PEDAGOGICAL PRACTICE)</b>	<b>28</b>
Training (introductory) practice	2
Psychology and pedagogical practice	2
Pedagogical practice	6
Production (pedagogical) practice	16
Pre -diploma (pedagogical) practice	2
<b>Total academic credits</b>	<b>63</b>

##### 4.2 Structure of the subject component

Module name and main disciplines	Academic credits
<b>BIOLOGY OF LIVING ORGANISMS</b>	<b>36</b>
<b>University Component</b>	<b>31</b>
Structure and functions of plant organisms	6
Diversity of plant organisms	5
Plant Physiology	5
Human and Animal Physiology	5

Structure and functions of animals 1	5
Structure and functions of animals 2	5
<b>Optional Component</b>	<b>5</b>
Human Biology	5
Human Anatomy	
<b>GENETICS AND EVOLUTION</b>	<b>22</b>
<b>University Component</b>	<b>6</b>
Molecular Biology	6
<b>Optional Component</b>	<b>16</b>
Individual development of living organisms	6
Cytology, histology and embryology	
Patterns of inheritance and variability	5
Genetics and the basis of breeding	
Comparative anatomy and evolution of living organisms	5
Evolutionary teaching	
<b>BIOPEDAGOGY AND ENVIRONMENT</b>	<b>9</b>
<b>Optional Component</b>	<b>9</b>
Biogeocenology	4
Ecology of plants, animals and humans	
Bioresources of Kazakhstan	5
Flora and fauna of the world	
<b>APPLIED AND INTEGRATED SCIENCES</b>	<b>26</b>
<b>Optional Component</b>	<b>26</b>
Environmental Chemistry	5
Theoretical foundations of inorganic chemistry	
Biochemistry	5
Bioorganic Chemistry	
Biophysics and Bioinformatics	6
Scientific foundations of natural science	
Biometrics	5
Experimental Biology	
Microbiology with the basics of biotechnology	5
Applied Biology with the basics of soil Science	
<b>RESEARCH IN BIOLOGY</b>	<b>20</b>
<b>University Component</b>	<b>9</b>
Conceptual Biology Training	5
<b>Optional Component</b>	<b>15</b>
STEM Education in Biology	5
Digital Technologies in Biology	
Design of STEM Education	
Modern approaches to the organization of biological experiment	5
Methodology of biological research	
Research and project activities in biological education	
Academic Letter	5
Content-language integrated learning in biology	
<b>FINAL ATTESTATION</b>	<b>8</b>
<b>Total academic credits</b>	<b>121</b>

### 4.3 The structure of the compulsory component

The Compulsory Component (Cycle of General Education Studies) consists of 56 academic credits (51 academic credits mandatory studies and 5 academic credits optional studies) and includes the following modules and courses.

Name of modules and courses	Academic credits
<b>COMPULSORY COMPONENT (CYCLE OF GENERAL EDUCATION STUDIES)</b>	<b>56</b>
<b>MANDATORY STUDIES</b>	<b>51</b>
<b>Module of historical and philosophical competencies</b>	<b>10</b>
History of Kazakhstan	5
Philosophy	5
<b>Module of socio-political knowledge (sociology, political studies, cultural studies, psychology)</b>	<b>8</b>
Sociology	2
Politology	2
Culturology	2
Psychology	2
<b>Language communication module</b>	<b>20</b>
<b>Kazakh (Russian) language</b>	10
<i>Foreign language</i>	10
<b>General education subjects</b>	<b>18</b>
Information and communication technologies	5
Physical Training	8
<b>OPTIONAL COMPONENT</b>	<b>5</b>
Fundamentals of Legal Literacy and Anti-Corruption culture	5
Ecology and sustainable development	
Fundamentals of Economics and Entrepreneurship	
Fundamentals of Leadership and receptivity to innovation	
Emotional Intellect	
Fundamentals of mathematical statistics	
Financial literacy	
<b>Total academic credits</b>	<b>56</b>