

University: Zhetusy University named after I. Zhansugurov	
Faculty: Natural Sciences and Technical	
Course code: BCPA 3.3	Course title: Comparative anatomy of vertebrates
<p>Type, range and method of training activities: The format is a mixture of about 45 hrs lectures/seminars/discussions on methodological topics. -15 hrs lectures + 30hrs exercises per semester The teaching is divided into modules in three separate weeks with intensive all-day coursework in the autumn semester. A day starts with a lecture over one main topic. The lectures will whenever possible seek to be concrete and problem oriented using relevant examples. The follow-up exercises are based on problem-solving of real examples. It is a must that the students are active during lectures and work with exercises, and also in presenting their own graduate work.</p>	
Number of credits:	
Recommended semester of study: 1 st year 2 nd semester	
Level of study: Master	
Prerequisites: Endocrine system physiology	
<p>Conditions for completing the course: Grades will be given for two part-exams: submitted exercises count collectively for 40% and a written 3-hour final examination will count for 60% of the final grade. Both elements must receive a passing grade.</p>	
<p>Learning outcomes: Study the modern systematic groups of vertebrates, diversity, their structure, livelihoods, consider the development and their relationship with the environment, evolution and economic value, as well as to show the position of the subject in the system of biological knowledge, the modern achievement of science in the field of morphology, ecology, biodiversity of animals and their role in biocenoses, to reveal the laws of the relationship of animals with the environment, to show the practical value of vertebrates in nature and human life. e Subject and methods of vertebrate Zoology. The origin of chordate animals and their classification. Feature type Chordates, subtype: besčerepnyh, tunicates and vertebrates. Systematics, comparative morphology, system of internal organs, development and phylogeny of vertebrate classes: round-necked, cartilaginous, bony fish, amphibians, reptiles, birds, mammals. Ways to adapt to life on land. Evolution, diversity and importance of vertebrates.</p>	
<p>Detailed description of lectures: To carry out a comparative characteristic of the anatomical, morphological and physiological characteristics of vertebrates, the degree of increase in their organization, phylogenetic relationships between them. Should know a certain minimum of necessary theoretical knowledge on the Zoology of vertebrates; Analyze the studied material, to identify the most characteristic morphological and physiological characteristics of living organisms, to trace the degree of increase in their organization, to explain the phylogenetic relationship between them;</p>	
<p>Recommended literature: Dzerzhinsky F.Ya. Comparative anatomy of vertebrates: Textbook for university students M.: "Aspect Press", 2005. - - 304 E.: ill., table- (Series "Classical University textbook") Konstantinov V.M., Shatalov S.P. Comparative anatomy of vertebrates M.: Akademiya, 2005. - 304 p. - ISBN: 5-7695-1770-0 Schmalhausen I.I. Fundamentals of comparative anatomy of vertebrates 1947. 540 p. 4th edition ispr. and add. Textbook for university biophages.</p>	

Language of instructions: English

Comments: The course will be teach at Zhetusy University named after I. Zhansugurov – Kazakhstan

Course assessment:

Grades will be given for two part-exams: submitted exercises count collectively for 40% and a written 3-hour final examination will count for 60% of the final grade. Both elements must receive a passing grade.

A	B	C	D	E	FX

Lecturers: candidate of biological sciences Oxikbayev Berikzhan

Date of the last revision:

Approved by: