REPUBLIC OF UZBEKISTAN
MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION
CHIRCHIK STATE PEDAGOGICAL UNIVERSITY

"I APPROVE"
Rector of Chirchik State
Pedagogical University
G.I. Mukhamedov
_____
2022 year "__" _____

ZOOLOGIYA 1
STUDY PROGRAM (SYLLABUS)

Field of knowledge:	100000 – Education
Field of study:	110000 – Education
Master's specialty:	60110900 – Biology

Chirchik - 2022 year

Curriculum (syllabus) of the board of Chirchik State Pedagogical University 2022 - " 30 " on 08, approved by the report No. 1.

Developers:

Sh.N. Omonov	ChSPU Teacher of the Department "biology"
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Reviewers:

M.Sh. Rahimov	- Head of the Department "Zoology" of the National University of Uzbekistan, b.f.d., prof.
L.N. Egamberdiyeva	- Associate Professor of the Department of "Biology" ChSPU .

The curriculum (Syllabus) of the Chirchik State Pedagogical university Faculty of Natural Science, Department of Biology, was reviewed oath recommended for approval at meeting " 27 " 08 2022.

Head of the Department: **V.B. Fayziyev**

Curriculum (syllabus) Chirchik State Pedagogical University Faculty of Natural Sciences 20 22 of the year " 29 " in 08 ___ It was discussed at the meeting number 1 .

Dean of the faculty: **A. K. Raximov**

STUDY PROGRAM (SYLLABUS)
Faculty of Natural Sciences
60110900 – Biology Education direction

General information		
Subject Name: Zoology 1		
Subject Code: Bio 2236	**Amount of credit: 6**	**Semester: 2**
Department name: Biology		
Subject teacher: Omonov Shoxrux Normuminovich		
Email: omonovshoxruh25@mail.ru		
Type of science: Mandatory		
Form of Education:	Daytime	
Baholash shakli:	Exam	
Evaluation form:	Uzbek	

Summary of science

The science program from zoology consists of two sections. Its first section contains information such as the structure, Reproduction, Development and survival of animals, their distribution on earth, their importance in nature and human life, and the systematics of invertebrate animals. The second section of the program is devoted to the study of the systematics and peculiarities of vertebrate animals.

Learning outcomes:

Students who have completed the course:

- Demonstrates a deep understanding of the concepts and principles of the animal world;
- Deeply analyzes the essence of the methods of zoological science;
- Able to apply suitable Zoological tools for solving problems in professional activities;

Competencies that will have according to the result of the course (PC):

- In future professional activities, the cell, tissue, internal and external structure of animals, taxanomy and systematics of the animal world, Zoology of invertebrate animals will acquire knowledge, qualifications and skills in the fields of Sciences **(PC-1);**
- participates in the implementation of research work **(PC-4).**

Subject content

Form of training: lecture (M) Zoology 1

M1	Introduction The structure and life of animals. History of zoology development.
M2	Type of sarcomastigophores, division into classes. The rootstocks are of the younger class, the genus amoebas.
M3	The structure, survival and reproduction of common amoeba. Parasitic amoebas. Structure and distribution of shell amoebas. The genus of foraminifera, features of salting and reproduction, significance. The main features of the structure of the Rays and sunsimons.
M4	Class of pests, features of the structure. The younger class of phytomastiginas. Reproduction, nutrition and structure of green Euglena. Colonial khivchinites, structure, nutrition and reproduction of volvox.. Classification of phytomastigines.. Genus of eugenasimones, phytomonodes and shields. Zoomastiginas younger class. Distribution and importance of parasitic mosquitoes.
M5	Type of infusions. The main features, classification of structure, reproduction and development. Classes of Cypriot and suckerinfusories. Class of infusories living parasite and symbiosis.
M6	General description of the type of sporalis. Classes of gregarinas and coccidiasimones, main categories, their development and importance. The category of blood spores, the importance and structure of the development of malaria plasmodesis.
M7	The structure and survival of multicellular animals. Classification. Tuban multi-celled. Plasticity type structure, reproduction and development.
M8	Porous type structure, reproduction and development.
M9	Type of spacers. Class of hydroid polyps. Structure, reproduction and development of freshwater Hydra. Class of Ssifoid jellyfish, structure, reproduction and development of Aurelia jellyfish. Poisonous jellyfish. Carol polyps class, structure and life expectancy. The formation of reefs,the importance of Caroll polyps. Phylogeny of the hollow type.
	Intermediate Control-1
M10	Comb type, structure and features of living life.
M11	Flat worm type, features of structure. Class of ciliated worms. Structure, reproduction and importance of white planaria. Structure and properties of sea-buckthorn.
M12	Suckers class, structure, Reproduction, Development and importance of liverworm.
M13	General description and classification of the type of Tugarak worm. Class of nematodes. Structure, reproduction and development of human soldier. Variety and pathogenic significance of parasitic nematodes. Phytonematodes have their structure and pathogenic significance. Classes of hyacinths, kinorinxes, primers, snowdrifts and their characteristics.

M14	General description and classification of the type of ringworm. Variety of many feathered, their importance in water bodies. Ring-shaped worm with a bow. Structure, reproduction and importance of the rain worm.
M15	Leeches class, structure, adaptation to parasitic yashahs, main constellations and significance. Ring worm type phylogeny.
M16	General description, classification of the type of mollusks. Lateral nerves are of the younger type. Class of Shields. The shells are of the younger type. Class of clams with bellies. Variety and importance of bellies.
M17	Two classes of phallus, the structure, reproduction and development of Bacillus. Class of Spike mollusks. Their structure and significance. Mollusk species phylogeny.
M18	Type of articular. General description.Breathers with Jabra are the youngest type. Class of crustaceans. The structure of river shrimp and their variety. The jaw-dropping class, the turkeys and the whiskers, are of the genus.
	Intermediate control-2
M19	General description of the younger type of cheliceralis. Structure, reproduction and development of classes of swordsmen and spiders. Tracheal ones are the youngest type. Class of polygons.
M20	Class, structure and characteristics of insects. Types according to the oral apparatus.Immature and fully metamorphosed developing insects.
M21	Classification of insects. Categories and families. Insects that live as a community.
M22	Ignaterians type.
Form of training: practical training (A) zoology 1	
A1	Protozoa (single-celled) the younger World. Type Euglenozoa: Class Euglenoidea (Euglenas). Representatives: Euglena viridis or Euglena gracilis. Structure and reproduction.
A2	Class kinetaplastida (Kinetoplastida). Representatives: Tryponasoma, lyamblya, lyeshmania, Trichomonas.
A3	Chlorophyta (Volvoxes) type. Colonial khivchinites. Representative: Volvax sp. (Valvax). Structure and reproduction.
A4	Infusories (Infusoria) or Cilia type (Ciliophora). Class of Cypriot infusories (Ciliata). Structure and reproduction of infusion of paramesia (Tufelka).
A5	Apecomplexa (Apicomplexa) or spore-forming (Sporozoa) type. Class of gregarinas (Gregarinina). Structure and development of cockroach gregarina. Hematozoea (blood sporalis) class. Lawyer: Plasmadium sp.(malaria Plasmodium). Structure and development cycle.
A6	Class of sarcadans (Sarcadina). Representatives: amoeba, arsella, difflyugia, foraminifera.
A7	The porous type is the structure of Sycon raphanus, body cells.
A8	Loosestrife (Coelenterata) type, class of Hydrozoas (Hydrozoa).

	Representatives: freshwater Hydra, colonial representative - obelia. Class of scyphomedoses (Scyphozoa). Structure and development of Aurelia jellyfish. Karoll polyps-Anthozoa. External structure of Actinia equine ni.
A9	Platyhelminthes (flat worms) type, Turbellaria (ciliated worms) class: representative: Dendrocoelum lacteum (White planaria). External and internal structure. Sucklesp (Trematoda) class. The external and internal structure of the liverworm, the development cycle.
	Current Control-1
A10	Class of tapeworm (Cestoda). Representatives: cattle salityori, Pig salityori, echinacok. Development of some representatives of tapeworm.
A11	Type of mollusks (Mollusca). Class of plate-cabrals (Lamellibranchia). Frog structure.
A12	Class of bellows molluscs (Gastropoda). Structure of the vine slug. Cephalopoda (spike) class: representative: Sepia officinalis (karakatisa), external and internal structure.
A13	Ring worm type (Annelida). Multi-kill worm (Polychaeta) class. Representatives: nereis or the structure of the sand worm. Low kill worm (Oligochaeta) class. The external and internal structure of the rain worm. Importance.
A14	Class of leeches (Hirudinea). The external and internal structure of the medical Leech.
A15	Type of articular (Arthropoda). Cheliceralis are of the younger type, the Class of spiders. External and internal structure of the Scorpion, phalanx, spider and mite.
A16	Class of crustaceans, the structure of Daphnia. High crustaceans. Category of ten-legged (Decapoda). External and internal structure of the river crab.
A17	Tracheata (tracheal) is the youngest type, the Class of Myriapoda (Coptic). Representative: Lithobius forficatus (kostyanka), external and internal structure.
A18	Tracheal ones are the youngest type (Tracheata). Class of insects (Insecta). Representatives: external structure of cockroaches, grasshoppers or beetles.
A19	The internal structure of insects. Types of postembryonic development of insects.
A20	Stages of reproduction and development of insects.
	Current Control-2
A21	Circle worm (Nemathelminthes) type. Class of nematodes (Nematoda). Representatives: external and internal structure of human soldier, Pig soldier or horse soldier.
A22	Phytonematodes. Structure and development of the root bulge nematode. Formation of bulges at the root of the plant.
A23	Ignaterians type (Echinodermata). Class of starfish (Asteroidea). External and internal structure of the starfish.

Teaching and learning methods

The module is organized through lectures and practical audience classes, as well as independent educational activities of students. The lectures provide theoretical information necessary for the analysis of the topics of the zoology course. In practical audience classes, the problems of the zoology course (in laboratory conditions) are presented, and students are given the opportunity to carry out practical implementation on the application of the necessary methods and techniques for their solution. In independent educational activities, students should study topics in depth and analyze topics using literature and scientific journals and sources.

Type of training	Allocated hours
Lecture	44
Practical training	46
Independent education	90
Total student hours of study and teaching	180

Criteria for assessing and controlling student knowledge in science

• Control and assessment of students ' knowledge is carried out by assessing the student's activity, intermediate control, final control and independent education.

• **Intermediate control** - this is an important stage in assessing the knowledge and practical skills acquired by the professor-teacher in the first part of the student's module and is an indicator of forecasting mastering in the future in this discipline. In intermediate control, the assessment of students ' knowledge is carried out through oral question and answer and written work. In the event that the student does not pass intermediate control, he is given the opportunity to re-submit another 2 times.**20 percent of the total assessment.**

• **Independent Education Assessment** – this is done through the students ' execution of one team and two individual given practical projects. In projects given in team order, students complete the practice on a given assignment in team form. Individually, each student is assigned a separate topic. The student conducts research, studying the goals and objectives of the given topic, the goal set with an understanding of its essence. It protects by analyzing the results obtained and preparing presentations with its conclusions. In the working Science Program, the number of topics, methods of content execution and deadlines for submission are fully disclosed.**50 percent of the total assessment.**

• **Final control** - this is a generalizing stage in the assessment of the knowledge and practical skills acquired by the professor-teacher in the course of the student. Final control is carried out in the form of written work. **30 percent of the total assessment.**

Evaluation, intermediate and final control tasks (tasks) are developed by the course professors, pre-moderated and approved by the head of the Department.

The content of structured tasks for conducting control types should allow an impartial, transparent and accurate assessment of the student's assimilation.

The student must not allow any actions that lead to academic misconduct (violation). For example, plagiarism, mutual agreement, falsification of results,

violation in the examination process, that is, the use of synopsis and fragments, telephone and other means of communication, communication with others inside or outside the room where the exam will be taken are prohibited. In doing so, the guilty students are excluded from the control or examination process by the score they collect or the Grade is converted to zero.

Changes and additions can be made to the evaluation and control criteria based on the characteristics of the science (course).

	Basic literature	
1.	Mevlyanov A., Khurramov Sh. "Zoology of invertebrates" T.: "Labor", 1998. 466 p.	
2.	Mevlyanov A., Khurramov Sh., Eshova.X., "Invertebrate zoology". T.: National Encyclopedia of Uzbekistan " 2006. 398 p.	
	Recommended additional reading	
1.	Dadayev S., Mevlanov O. "Zoology". T.: "Economics and finance" 2008.	
2.	Laxanov J. L. "Umurtqalilar zoologiyasi". T.: "O'AJBNT" markazi 2005y.	
3.	Gulmamatov.A. "Field practice from invertebrate animal Zoology". T.: "Teacher" 2004.	
4.	Muminov.V.A., Eshova X. S.,Raximov.M.Sh."practical exercises from Invertebrate Zoology". T.: 2005.	

Internet addresses

1. www.pedagog.uz
2. www.edu.uz
3. http://ziyonet.uz
4. www.cspu.uz