

Name of science	Ornithology
Fan/module code	BXXU404
Semester(s) in which the subject is taught.	8 th semester
Responsible teacher	<i>Sanayeva Lola Shukurbayevna. Candidate of Biological Sciences, Acting Associate Professor.</i>
Ta'lim tili	<i>Uzbek</i>
Connect to the curriculum	Elective subject
Study hours (including contact hours, independent study)	Total hours-120. Lecture hours-30 Practical hours-30 Independent study hours-60
ECTS	4
Prerequisites/Relationship to disciplines	Zoology
Objectives/learning outcomes of the subject	<p>The purpose of teaching the subject is to create in the minds of students Ornithology (Greek ornithos bird + logos science, teaching) is a branch of zoology that studies birds, studies the morphology, physiology, embryology, ecology, systematics and distribution of birds. Ornithology is a branch of biological sciences that studies birds, including the development of understanding, knowledge and skills in theoretical and practical issues of zoology, instilling love for birds, and educating them in an aesthetic spirit; developing their cognitive and thinking activities, independent knowledge acquisition and self-control skills.</p> <p>The task of the subject is to familiarize students with the morphology, physiology, embryology, ecology, systematics, distribution and zoogeography of birds..</p>
Course content (topics)	<p>I. Main theoretical part (lectures).</p> <p>Topic 1. Subject, goals, tasks and history of development of ornithology</p> <p>Topic 2. Musculoskeletal system of birds</p> <p>Topic 3. Skin formations</p> <p>Topic 4. Digestive system of birds</p> <p>Topic 5. Respiratory system</p> <p>Topic 6. Circulatory system</p> <p>Topic 7. Excretory organs</p> <p>Topic 8. Nervous system and sensory organs.</p> <p>Topic 9. Genital organs of birds</p> <p>Topic 10. Reaction of birds to seasonal changes in living conditions</p> <p>Topic 11. Systematics of birds</p> <p>Topic 12. Origin and evolution of birds</p> <p>Topic 13. The number of birds and its dynamics.</p> <p>Topic 14. Ecological aspects of bird behavior</p> <p>Topic 15. The system of analyzers and spatial orientation of birds</p> <p>II. Instructions and recommendations for practical exercises</p> <p>Methodology for conducting practical exercises The structure of the practical exercise includes.</p> <p>The teacher's preparation for a practical lesson begins with the study of the initial</p>

documents (curriculum, thematic plan, etc.) and ends with the design of a lesson plan. The teacher should have an idea of the goals and objectives of the practical lesson, the amount of work that each student must perform.

The main methodological document of the teacher in preparing and conducting a practical lesson is the methodological instructions.

How much time should you spend checking homework?

- how much time should you spend on conducting a survey among students on the theory and what questions should you ask;
- what examples and tasks should be solved on the board in what sequence; what should you pay attention to in a particular task;
- how to arrange drawings and calculations for each task (test);
- who should be interviewed on the theory and who should be called to the council to solve problems;
- what tasks should be proposed for solving on the spot without resorting to the council;
- what tasks to offer to "strong" students;
- what tasks to set for independent solution at home.

The purpose of practical exercises is to perceive the theory, acquire the skills to consciously apply it in educational and professional activities, and to form the ability to confidently formulate one's own point of view

II. Instructions and recommendations for practical exercises

1. Methods for identifying bird species, labeling.
2. Methods for identifying bird species, labeling.
3. Skin cover. Feather structure
4. Skeleton structure .
5. Basic units in the systematics of birds
6. Internal structure of birds (skeletal and muscular systems)
7. Nervous and digestive systems
8. Respiratory and circulatory systems.
9. Structure of the excretory and reproductive organs.
10. Reaction of birds to seasonal changes in living conditions
11. Systematics of birds
12. Origin and evolution of birds
13. The number of birds and its dynamics.
14. Ecological aspects of bird behavior
15. The analyzer system of birds and spatial orientation

III. Independent learning and independent work.

The competence of independent learning serves students' independent self-development, increasing the effectiveness of professional activity. Students perform independent work on their own, through a mobile device, in the traditional form of independent work under the guidance of a teacher, and in the electronic form of independent work under the guidance of a teacher.

Recommended topics for independent study:

1. General description of the class of birds
2. Musculoskeletal system
3. Skin folds
4. Digestive system of birds
5. Respiratory system
6. Circulatory system
7. Excretory organs
8. Nervous system and sensory organs
9. Genital organs of birds
10. Reaction of birds to seasonal changes in living conditions
11. Systematics of birds

12. Origin and evolution of birds
13. Ecological groups of birds
14. Distribution of birds
15. Ornithofauna of zoogeographic regions
16. The number of birds and its dynamics
17. Physiological and ecological characteristics of birds
18. Movement of birds on land
19. Swimming and diving
20. Flight
21. Nutritional biology
22. Nutritional physiology
23. Water-salt metabolism in the body of birds
24. Chemical and physical thermoregulation
25. Ecological aspects of bird behavior
26. Signaling and communication
27. The system of analyzers of birds and space goal
28. Periodic events in the life of birds
29. Daily and seasonal rhythms
30. Control of reproduction in birds. Reproduction and development.
31. Molting. Physiology and control of molting
32. Migration. Methods of studying migration
33. Importance of birds in nature
34. Birds and aviation
35. Birds and medicine
36. Birds and hunting
37. Ichthyophagous bird species and their importance
38. Birds and agriculture
39. Birds and urban ecology
40. Issues of managing bird behavior
41. Protection of birds
42. Issues of protecting birds and their habitats
43. Protection of birds included in the "Red Book" of Uzbekistan
44. International cooperation in bird conservation
45. Problems and importance in the field of bird conservation.
46. Hypertology and its status in Uzbekistan.
47. The importance of birds in agriculture and forestry
48. Game birds and hunting in Uzbekistan.
49. Birds found in the territory of Uzbekistan and their practical importance.
50. Care of the offspring of birds.
51. The structure and distribution of mammals belonging to the orders of Artiodactyls, Lepidoptera, Lepidoptera, Sirenidae and Lepidoptera.
52. Organization of bird censuses.
53. Bird migration.
54. The mechanism of distribution of mammals on the Earth.
55. Diversity and practical significance of mammals found in Uzbekistan.
56. Ornithology and its situation in Uzbekistan.
57. Game animals and the organization of hunting.
58. Organization of animal censuses.
59. Protected natural areas of Uzbekistan and their importance in the preservation and reproduction of rare animals. families.
60. Class of birds. Order of Podicipediformes.
61. Order of petrels and flamingos.

	62. Reproduction and development of birds. 63. Problems and solutions in the field of bird conservation 64. Class of birds. Pelicanidae and pelicans. 65. Class of birds. Storkidae and pelicans. 66. Class of birds. Storkidae. 67. Flamingoidae. 68. Anseriformes. 69. Class of birds. Falconiformes 70. Class of birds. Galliformes. 71. Gruiformes. 72. Class of birds. Charadriiformes 73. Class of birds. Columbiformes. Cuculiformes. 74. Class of birds. Cuculiformes. 75. Order Caprimulgiformes. 76. Order Psittaciformes 77. Class Birds. Order Apodiformes. 78. Class Birds. Order Strigiformes. 79. Class Birds. Order Tinamuses, i.e. hidden-tailed (Tinamiformes) 80. Class Birds. Order Piciformes. 81. Class Birds. Order Coraciiformes. 82. Class Birds. Order Passeriformes. 83 Ecology of Birds 84. Origin of Birds 85. Useful and Harmful Birds
Exam form	<p>It is important to assess the theoretical and practical knowledge of students during current, intermediate and final control in the subject.</p> <p>1. Current control is aimed at assessing the activity shown by students during the lesson, their practical skills and ability to use software. The student's mastery of the course topics, as well as constructive interpretation and analysis of the educational material, development of module-specific skills, acquisition of practical skills (in terms of quality and the specified number) and competencies, solving problem situations aimed at applying professional practical skills, teamwork, preparation of presentations, etc. The student's activity in daily lessons is assessed through the preparation of. Forms of current control:</p> <p>activity in lessons, preparation of educational materials, work with sources within the subject, use of educational technologies, teamwork, preparation of presentations, test.</p> <p>2. Intermediate control. During the semester, lectures are held 2 times based on the number of hours of study. The intermediate examination is evaluated with 20 points on a 100-point system. Students who score 60% of the points allocated for the intermediate and current examination are allowed to take the final examination.</p> <p>3. Final examination.</p> <p>The final examination is carried out at the end of the course and is aimed at assessing the general knowledge and skills of students.</p> <p>The final examination is held at the end of the semester to determine the level of mastery of the student's theoretical knowledge and practical skills in the relevant subject. The final examination ticket contains 5 questions, and the answers to each question are evaluated with a maximum of 10 points.</p>
Educational outcomes and exam requirements	<p>Complete mastery of theoretical and methodological concepts on the subject, correct reflection of the results of the analysis, independent thinking about the processes being studied, and completion of assignments in current and intermediate forms of assessment, as well as assignments for final assessment.</p> <p>The student must have passed the current control, intermediate control and independent learning assignments in the relevant subject within the established period.</p>

	<p>A student who has not passed the current control, intermediate control and independent learning assignments, as well as who has scored points in the range of “0-29.9” for these assignments and types of control, is not included in the final type of control.</p> <p>Also, a student who has missed 25 or more percent of the classroom hours allocated to the subject without an excuse will be dismissed from this subject is excluded, is not admitted to the final exam and is considered to have not acquired the relevant credits in this subject.</p> <p>A student who has not passed the final exam or has not passed the final exam and has scored in the range of "0-29.9" for this type of exam is considered to be in academic debt.</p>
Recommended readings	<p style="text-align: center;">Main literature</p> <ol style="list-style-type: none"> 1. Torayv M.M., Kholboyv F.R., Rayimov A.R., Rakhmonov R.R. Birds of the Bukhara region. Scientific methodological manual / Tashkent: Navro`z, 2015. – P. 90. 2. Kholboyv F.R., Azimov J.A., Bakoyv S.B., Torayv M.M., Esanov H. Participation of birds in biohazards in urban ecosystems and recommendations for its prevention / Tashkent, 2012. – 20 p. 3. F.R. KHOLBOEV, M.M. TORAYEV, M.Sh. RAKHIMOV Ornithology. Tashkent-2022 <p style="text-align: center;">Additional literature</p> <ol style="list-style-type: none"> 1. Amytov M.B. Ptitsi Karakalpakii i ix okhrana / Nukus, 1981. - 138 p. 2. Bakaev S.B. Ekologiya razmnozhniya voronovikh ptits v Uzbykistany / Tashkynt, 1984. – 103 p. 3. Blagosklonov K.N. Gnyzdovaniy i privlychyniy ptits v sadi i parki / Moscow, 1991. – P.193–218. 4. Vladishyvskiy D.V. Ptitsi v antropogynnom landscape / Novosibirsk, 1975. – 199 p. 5. Gladkov N.A., Rustamov A.K. Animal cultural landscapes / Moscow, 1975. – 220p. 6. Golovanova E.N. Birds and rural economy. – Leningrad: Lyninizdat, 1975. – 167 p. <p style="text-align: center;">Sources of information:</p> <ol style="list-style-type: none"> 1. http://zoohistory.ru 2. http://www.ebio.ru 3. www.wikipedia 4. http://www.seaworld.org/animal 5. http://www.zin.ru