**SYLLABUS**

**Fall semester 2022-2023 academic years**

**on the educational program «Digital content in biology education»**

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| **Discipline’s code** | **Discipline’s title** | **Iindependent work of students (IWS)** | **Number of credits** | | | | | **Number of credits** | **Independent work of student with teacher (IWST)** |
| **Lectures (L)** | **Practical training (PT)** | | **Laboratory (Lab)** | |
| **TsKBO 6308** | Digital content in biology education | 3 | 15 | 30 | | - | | 5 | 7 |
| **Academic course information** | | | | | | | | | |
| **Form of education** | **Type of course** | **Types of lectures** | | | **Types of practical training** | | **Form of final control**  **On univer sysrem Test** | | |
| Full-time | Theoretical, Practical | Problematic | | | Problematic solving,  Situational tasks | |
| Lecturer | Ashirova Zhadyra Berdimuratovna | | | | | |  | | |
| e-mail | Jadiashirova@gmail.com | | | | | |
| Telephone number | +7771 467 09 70 | | | | | |

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| **Aim of course** | **Expected Learning Outcomes (LO)\***  As a result of studying the discipline the undergraduate will be able to: | **Indicators of LO achievement (ID)**  (for each LO at least 2 indicators) |
| To develop the principles, concepts and issues related to the use of digital technologies to support learning and create a new digital contents and apply them in educational practice | 1. Develop principles for the introduction and use of information and communication technologies in the educational process; | 1.1. To understand the principles, concepts and issues related to the use of digital technologies to support learning and apply them in their practice  1.2. To analyze existing applications of locally available digital technologies or allow you to conduct new educational activities |
| 2. Implement the application of information and communication technologies of biology training in practice; | 2.1. To examine how and why digital technologies can be used to support students ' learning and challenges  2.2. Defines how and why digital technologies has used in their practice to support learning and promote learning, with reference to relevant concepts, principles and theories. |
| 3. Apply methodological foundations for the design and implementation of field and laboratory biological research using modern equipment and computing complexes, | 3.1. To develop the ability to find and choose appropriate digital technologies and related activities to increase and motivate students to support specific learning goals  3.2. Apply modern computer technologies to solve research and production and technical tasks of professional activity in education process |
| 4. Find and evaluate the modern distance learning technologies in learning biology practice; | 4.1. Increases the ability to plan, execute, and evaluate learning episodes using digital technologies.  4.2. Evaluates digital technologies to support learning and support learning.  4.3. |
| 5. Mastering the skills of computer processing of experimental results | 5.1 Create a short-term projects in order to master the skills in administrating learning process  5.2. Find and evaluate different platforms, sites, programs, gadgets for composing lessons for biology learning process |
| **Prerequisites** | Information and communication technologies | |
| **Post requisites** | Methods of teaching biology | |
| **Information resources \*\*** | **Main Literature:\*\***   1. 1. Teaching and Digital Technologies: Big Issues and Critical Questions Paperback. January 8, 2016 by Michael Henderson (Editor), Geoff Romeo (Editor) 2. 2. Forsyth, E. (2016). Using videoconferencing for professional development and meetings. Computers in Libraries, 36(7), 11-14. 3. 3. Remis, K. K. (2015). LMS enhances K12 instruction: Systems increase engagement, provide quick access to digital resources and help teachers with administrative tasks. District Administration, Digital Edition, May 27, 2015<http://www.districtadministration.com/article/lms-enhances-instruction> 4. 4. Dominic, M. (2016). Handbook of Research on Mobile Learning in Contemporary Classrooms. Hershey, PA: IGI Global. 5. **Additional Literature:** 6. 5. Korakakis, G. G., Pavlatou, E. A., Palyvos, J. A. and Spyrellis, N. N. (2009) “3D visual ization types in multimedia applications for science learning: A case study for 8th grade studen ts in Greece”, Computers & Education, Vol 52, pp 390‐401. 7. 6. Biancarosa, G., & Griffiths, G. C. (2012). Technology tools to support reading in the digital age. The Future of Children, 22(2), 139-160.<http://www.jstor.org/stable/23317415?seq=1&cid=pdf-reference#page_scan_tab_contents>   Internet resources (at least 3-5)   1. <http://elibrary.kaznu.kz/ru> 2. <https://expresswriters.com/digital-content-strategy-guide/> 3. <https://prezi.com/> 4. <https://www.clearslide.com/> 5. <https://voicethread.com/> 6. <https://tophat.com/> | |

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| **Academic policy of the course in the context of university moral and ethical values** | **Academic Behavior Rules:**  All students are required to register for the MOOC. The deadlines for completing the modules of the online course must be strictly observed in accordance with the schedule for studying the discipline. Leave in case of current MOOC or SPOC courses.  **ATTENTION!** Failure to meet deadlines results in loss of points! The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the training course, as well as in the MOOC. Leave in case of current MOOC or SPOC courses.  **Academic values:**  - Practical trainings/laboratories, IWS should be independent, creative.  - Plagiarism, forgery, cheating at all stages of control are unacceptable.  - Students with disabilities can receive counseling at e-mail \*\*\*\*\*\*\*@gmail.com. |
| **Evaluation and attestation policy** | **Criteria-based evaluation:**  Assessment of learning outcomes in relation to descriptors (verification of the formation of competencies in midterm control and exams).  **Summative evaluation:** assessment of work activity in an audience (at a webinar); assessment of the completed task. |

**CALENDAR (SCHEDULE) THE IMPLEMENTATION OF THE COURSE CONTENT:**

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| week | Topic name | Number of hours | Max.  score\*\*\* |
| **Module 1** Digital content purposes and objectives  **(the number of modules, the name of the topics, as well as their distribution by week is set by the teacher)** | | | |
| 1 | **Lec 1.** The purpose, objectives and relationship of the subject of digital content in biological education with other sciences | 1 |  |
| **Sem 1.** To determine how and why digital technologies in biological education can be used in their practice, with reference to relevant concepts,  Principles and theories | 2 | 6 |
| 2 | **Lec 2.** Potential of digital technologies in education, methods of statistical control of the quality of Education | 1 |  |
| **Sem 2.** Development of principles and concepts related to the use of digital technologies in biological education (using the example of Microsoft word) | 2 | 6 |
| **IWST 1. Consultation on the implementation of IWS1 on the topic:**  Development of scientific publications on Master's topics using Microsoft programs**.** Development of a structural and logical scheme of the studied material.  ATTENTION: (number of IWS (2-5), IWST (6-7)  Independent work of students (IWS, colloquium, etc.) is estimated at 55-60% of the total points. | 1 | 50 |
| 3 | **Lec 3.** Features of the use of digital technologies in the school, the development of skills of the XXI century among students | 1 |  |
| **Sem 3.** Understand the problems associated with the use of digital technologies in biological education and apply them in their own practice (using the example of Microsoft excel) | 2 | 6 |
| **IWS 1.** «Development of scientific publications on Master's topics using Microsoft programs»  Project work – use any example of your report as a Master peace  Demonstrate at any available program. |  |  |
| 4 | **Lec 4.** Features of the use of digital technologies in biology lessons | 1 |  |
| **Sem 4.** Planning, preparing and conducting classes using one or more  digital technologies | 2 | 6 |
| **IWST 2. Colloquium – logical task**  Development of glossary of the course material. | 1 | 8 |
| 5 | **Lec 5.** The importance of using digital technologies in active and inclusive learning | 1 |  |
| **Sem 5.** Demonstrate how you can develop an active learning and inclusive learning environment using digital technologies, as well as engage and motivate students to learn. | 2 | 6 |
| **Module 2. Ways of digital content development** | | | |
| 6 | **Lec 6.** Stages and concept of composition of the electronic textbooks  Электрондық оқулықтар құрамының кезеңдері мен түсінігі https://stud.kz/referat/show/96732 | 1 |  |
| **Sem 6.** Research of electronic textbook compiling programs | 2 | 6 |
| 7 | **Lec 7.** Different tools for writing an e-book |  |  |
| **Sem 7.** Drawing up the content of an electronic textbook |  |  |
| **IWST 3. Consultation related to IWS 2. task** | 1 |  |
|  | **LEVEL CONTROL 1** |  | **100** |
| 8 | **Lec 8.** Ways to add and edit video and audio recordings to an e-book or texts | 1 |  |
| **Sem 8.** Adding and editing video and audio recordings to an e-book or texts | 2 | 6 |
| **IWS 2.**  «The impact of using digital technologies on students ' learning»  Written Essay with practical explanation with examples, references and summary. Word file no less than 2 pages, New Roman shrift #12. |  | 23 |
| 9 | **Lec 9.** Formation of information and communication competence in biological education | 1 |  |
| **Sem 9.** Selection of appropriate digital technologies for the design of learning activities specific to the development of different skills | 2 | 6 |
| 10 | **Lec 10** Psychology of personality and interpersonal relationships in biological education using digital technologies | 1 |  |
| **Sem 10.** Identify strengths and directions in designing educational | 2 | 6 |
| **IWST 4. Colloquium Consultation on the implementation of IWS3** | 1 |  |
| **Module 3 Digital approaches of digital design education** |  |  |
| 11 | **Lec 11** SMART Learning technology in biological education | 1 |  |
| **Sem 11.** Collaborative environment choosing the most effective form of lesson organization | 2 | 6 |
| 12 | **Lec 12** Review of the methodology and system of distance learning, Mass Open Online Courses | 1 |  |
| **Sem 12.** Analysis of modern technologies of online events | 2 | 6 |
| **IWST 5. Consultation questions-answers session** | 1 |  |
| 13 | **Lec 13** Use of multimedia technologies in biological education | 1 |  |
| **Sem 13.** Intensification of the educational process using multimedia technologies in biological education | 2 | 6 |
| **IWS 3.** Problems of organizing educational activities using digital technologies.  Report in presentation format made in Power point, no less than 7 slides with conclusion and used resources. |  | 23 |
| 14 | **Lec 14** Assessment of students' knowledge using digital technologies in biological education (Quiz programs) | 1 |  |
| **Sem 14.** Working with the Free Quiz Maker program | 2 | 6 |
| **IWST 6. Colloquium** Make a structural and logical diagram of the read material – logical task | 1 | 6 |
| 15 | **Lec 15** Features of working with Converter programs in biological education | 1 |  |
| **Sem 15.** Working with Freemake Video Converter | 2 | 6 |
|  | **IWST 7. Consultation on examination preparation** | 1 |  |
|  | **LEVEL CONTROL 2** |  | **100** |

Dean \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_B.Zayadan

Head of Department \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_A. Kustubaeva

Lecturer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Zh. Ashirova

**NOTE:**

The total volume of the syllabus is no more than 5 pages, font 10, Times New Roman

\* LO is based on cognitive (1-2), functional (2-3), systemic (1-2) competencies, total 4-7.

The types and number of competencies (out of 5) are compiled according to the level of education.

\*\* Give no more than 5-7 sources of literature (full bibliographic description), in depth for the last 10 years. (in exceptional cases, 20-30% of irreplaceable classical textbooks), for natural directions - 10 years. Humanitarian direction -5 years

Literature and resources:

1. Basic literature

2. Additional reading

3. Software

4. Internet resources

5. Professional databases

\*\*\*Spreading the assessment of students' knowledge is at the discretion of the compilers of the syllabus.

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