**Program**

**The final control on the course** **“Basics of SQL”**

**for 2021 -2022 academic year**

**Faculty**: Information technologies

**Department**: Information Systems

**Cipher and the name of the educational program**: 6B06102 - Information systems

**Name of the discipline**: Basics of SQL

***Course***: 3

**Lecturer**: Vladislav Karyukin

**The form of the final control on the academic discipline** - *testing*

**Platform**: LMS Moodle

**Test passing control -** online proctoring.

The proctoring technology *(eng. ”proctor” - to control the course of the exam)*. As in a regular exam in the classroom, Proctors control that the examinees pass the tests honestly. They complete the tasks on their own and do not use additional materials. Both a specialist (face-to-face proctoring ) and a program that controls the subject’s desktop, the number of faces in the frame, extraneous sounds or voices, and even eye movements ( cyber proctoring) can monitor the online exam in real-time using a webcam. A type of mixed proctoring is often used. A video recording of the exam with the comments of the program is additionally viewed by a person who decides whether violations really took place.

Every student is required to be familiarized with the rules and confirm in the chat that he /she is familiar with the schedule, rules, and instructions for proctoring.

***Duration of testing*** – 60 minutes for 25 questions; 1 attempt.

***Number of test questions* –** 25( 7 multiple choice + 6 true/false+6 matching +6 missing word choice = 25)

### **EXAM REGULATIONS**

IMPORTANT – the exam is scheduled.

Thirty minutes before the start, students must prepare for the exam in accordance with the requirements of the instructions for proctoring.

### Test results may be reviewed based on the results of proctoring. If a student violates the rules for passing the test, his result will be canceled.

**Topics covered by exam questions ( syllabus )**

1. Introduction to databases
2. Database concepts
3. Simple Queries in SQL
4. SQL queries with conditions
5. Database objects
6. SQL Aggregate Functions
7. SQL subqueries
8. DDL ( Data Definition Language )
9. DML ( Data Management Language )
10. Views in SQL
11. Stored procedures in SQL server
12. Triggers in SQL
13. Transactions in SQL Server
14. Data Warehouse and OLAP Design
15. Creating OLAP cubes and building MDX queries
16. Creating a Multivariate Data Analysis Project in Visual Studio
17. Working with Microsoft Analytics Platform power BI
18. Data upload to Microsoft power BI
19. Building reports with visualization
20. Publishing Reports to the Web Power environment BI

**LIST OF RECOMMENDED LITERATURE**

1. Joseph, J. Bambara SQL Server® Developer’s Guide / Joseph J. Bambara, Paul R. Allen. - Moscow: **Mir** , **2016** . - **235** c.
2. Kalen, Delaney Inside Microsoft® SQL Server(TM) 2005: Query Tuning and Optimization / Kalen Delaney et al. - Moscow: Microsoft Press, **2014** . - 448 c.
3. Allen, G. Taylor SQL for Dummies / Allen G. Taylor. - M.: Dialectics, Williams, **2015** . - 416 c.
4. Ben, Forta SQL in 10 minutes / Forta Ben. - M.: Dialectics / Williams, 2015. - **673** p.
5. Bewley, A. Learning SQL / A. Bewley. - M.: Symbol-plus, 2014. - **108** p.
6. Graber, Martin SQL for mere mortals / Martin Graber. - M.: LORI, 2014. - 378 p.
7. Goodson, John A Practical Guide to Data Access / John Goodson, Rob Steward. - M.: BHV-Petersburg, 2013. - 304 p.
8. Date, K. J. SQL and Relational Theory. How to write SQL code correctly / K.J. Date . - M.: Symbol-plus, **2017** . - 480 c.
9. Dunaev, V. V. Databases. SQL language for student / V.V. Dunaev. - M.: BHV-Petersburg, **2016** . - 288 p.
10. Carwin , Bill SQL Database Programming. Common Mistakes and How to Eliminate Them / Bill Carvin . - M.: Reed Group, **2013** . - 336 c.
11. Kriegel , A. SQL. User's Bible / A. Kriegel . - M.: Dialectics / Williams, **2013** . - **110** c.
12. Michael , McLoughlin Oracle Database 11g . Programming in PL/SQL / Michael McLoughlin . - M.: LORI, 2014. - **862** p.
13. Markin, A. V. Building queries and programming in SQL. Textbook / A.V. Markin. - M.: Dialogue- Mifi , 2014. - 384 p.
14. Martyshyn , S. A. Design and implementation of databases in MySQL DBMS using MySQL workbench . Textbook / S.A. Martyshyn , V.L. Simonov,

M.V. Khrapchenko. - M.: Forum, Infra-M, 2015. - 160 p.

1. Molinaro , E. SQL. Collection of recipes / E. Molinaro . - M.: Symbol-plus, 2013. - **820** p.
2. Oppel , Andrew J. SQL. Complete guide / Oppel Andrew J.. - M .: Dialectics / Williams, 2016. - **902** p.
3. Price , Jason Oracle Database 11g SQL. SQL statements and PL/SQL programs / Jason Price. - M.: LORI, 2014. - 688 p.
4. Price , Jason Oracle Database 11g: SQL. SQL statements and PL/SQL programs / Jason Price. - M.: LORI, **2016** . - 660 c.
5. Przyjalkowski , V.V. Introduction to Oracle SQL / V.V. Przyjalkowski . - M.: Binom. Knowledge Lab, Internet University of Information Technology, **2013** . - 320 c.
6. Arrived, Bill Oracle PL/SQL. For professionals / Bill Pribyl. - M.: Piter, 2014. - **725** p.
7. Designing and Implementing Microsoft SQL Server 2000 Databases. MCSE Tutorial. - M.: Russian Edition, **2013** . - 664 c.
8. Saurab , Gupta Oracle PL/SQL. Developer Guide / Gupta Saurab . - M.: LORI, 2014. - **978** p.
9. Celco , Joe SQL for Professionals. Programming / Joe Celko . - M.: LORI, **2015** . - 464 c.
10. , Ben Master your own SQL in 10 minutes / Ben Forta. - M.: Williams, 2015. - 288 p.
11. Hardman , Ron Oracle Database PL/SQL. Expert advice / Ron Hardman , Michael McLaughlin . - M.: LORI, 2014. - 450 p.
12. Airey , Jones Functions of SQL. Programmer’s Handbook / Jones Airy . - M.: Dialectics / Williams, **2014** . - **556** c.

**Evaluation criteria (Rating scale):**

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| --- | --- | --- | --- |
| "Great" - | A | 4.0 | 95-100 |
| A- | 3.67 | 90-94 |
| "Okay" - | B+ | 3.33 | 85-89 |
| V | 3.0 | 80-84 |
| V- | 2.67 | 75-79 |
| C+ | 2.33 | 70-74 |
| "satisfactory" - | WITH | 2.0 | 65-69 |
| WITH- | 1.67 | 60-64 |
| D+ | 1.33 | 55-59 |
| D- | 1.0 | 50-54 |
| "unsatisfactory" - | FX | 0.5 | 25-49 |
| F | 0 | 0-24 |