

**THE ACADEMY OF SCIENCES OF TURKMENISTAN OGUZ HAN  
ENGINEERING AND TECHNOLOGY UNIVERSITY OF  
TURKMENISTAN**



Computer Sciences and Information Technologies Faculty Computer  
Sciences and Information Technologies Department

**Mathematical Modeling in Computer Science**

# **GRADUATION THESIS**

**Author:** Resul Gulov

**Project supervisor:** Eziz Kakyshov

**THE ACADEMY OF SCIENCES OF TURKMENISTAN**

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UNIVERSITY OF TURKMENISTAN**

Computer Sciences and Information Technologies Faculty Computer

Applied Mathematics and Informatics department

## **GRADUATION THESIS (PROJECT)**

### **DESCRIPTION**

Topic of the graduation thesis (project):  
Mathematical Modeling in Computer Science

Student: Resul Gulov  
*(full name)*

Supervisor: **Eziz Kakyshov**

*(full name, degree)*

Advisors on the chapters of the thesis (project):

1. Yazgulyyeva Jahan  
*(full name, degree)*

2. Gulshat Orazdurdyyeva  
*(full name, degree)*

3. Enar Populova  
*(full name, degree)*

4. Oguljan Gawirova  
*(full name, degree)*

Head of the department: Eziz Kakyshov  
*(full name, degree)*

Review author: Eziz Kakyshov, Head of the Applied Mathematics and Informatics  
Department of Oguz Han Engineering and Technology University of Turkmenistan  
*(full name, degree, place of employment and position)*

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Computer Sciences and Information Technologies Department  
Major of Information systems and technologies**

**“Approved by”**

**Head of the department** \_\_\_\_\_

Date “\_\_\_\_\_” \_\_\_\_\_ 2022 year

**THE STUDENT THESIS (PROJECT)**

**ASSIGNMENT**

Resul Gulov

*(full name)*

1. Name of the graduation thesis (project): Mathematical Modeling in Computer  
Science

No. B \_\_\_\_\_ / \_\_\_\_\_ issued on „\_\_\_\_\_”th of \_\_\_\_\_ in 20\_\_\_\_.

2. Deadline of the student thesis (project): **25.05.2024** y  
*(date and month)*

3. Information (conditions) necessary for the preparation of the thesis (project)

1) Mathematic concepts, Guidelines, References.

2) Mathematical Modeling in Computer Science

4. Content (names of the chapters and content) of the thesis (project):

1) Introduction

2) Common uses of Mathematical Modeling in Computer Science

3) The need for a mathematical modeling in computer science

4) Overview of Mathematical Modeling in Computer Science

5) Theoretical Framework of Mathematical Modeling in Computer Science

6) Conclusion

7) Recommendation

8) References

5.Content of drawings (indicate the names of the required drawings):

6. Information on the advisors of the thesis (project)

Full name and academic degree of an advisor	Place of employment and position	Date of assignment from the advisor	Date of the acceptance of the assignment by the student (date and signature)
Kakyshev Eziz	Applied Mathematics and Informatics Department,lecturer	08.10.2023y	08.10.2023y
Owezov Halmuhammet	Applied Mathematics and Informatics Department,lecturer	10.12.2023y	13.12.2023y
Bekiyeva Maral	Applied Mathematics and Informatics Department,lecturer	15.12.2022y	30.12.2022y
Batyrova Ogulbabek	Applied Mathematics and Informatics Department,lecturer	11.02.2023y	13.02.2023y

7. Date of the assignment „ \_\_\_\_\_ ” \_\_\_\_ of \_\_\_\_\_ 20 \_\_\_\_\_

Supervisor of the thesis (project): \_\_\_\_\_  
(signature)

To be performed by : \_\_\_\_\_  
(signature)

### 8. Monthly-daily plan of the thesis (project)

No.	Names of the chapters of the thesis (project)	Time period (dates) of the completion of the chapters of the thesis (project)	Remarks of the supervisor about the development process of the thesis
1	Introduction	05.11.2022-12.11.2022y	Done
2	Common uses of Mathematical Modeling in Computer Science	19.11.2022-03.12.2022y	Done
3	The need for a mathematical modeling in computer science		
4	Overview of Mathematical Modeling in Computer Science		
5	Theoretical Framework of Mathematical Modeling in Computer Science		
6	Conclusion		
7	Recommendation		

**Student signature**\_\_\_\_\_

**Supervisor signature**\_\_\_\_\_

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**FEEDBACK**

Student-author of the project: Resul Gulov

*(full name)*

Topic of the project: “Mathematical Modeling in Computer Science“

Profession: Applied mathematics and informatics

Volume of the graduation project:

Number of drawings:

Number of pages of description:5

1. Summary of the graduation project: The graduation project on Mathematical Modeling in Computer Science aimed to address a specific problem within the field by leveraging mathematical techniques to develop a robust model. The project commenced with an extensive literature review, exploring existing models and approaches in computer science. The research focused on the theoretical foundations, incorporating relevant mathematical concepts to formulate a comprehensive model.
2. Advantages of the graduation project: The project allows the application of theoretical concepts learned during the academic program to solve real-world problems in computer science. It bridges the gap between theoretical understanding and practical implementation.
3. Readiness of the graduation project: Clearly defined problem statement or research question that the project aims to address within the field of computer science using mathematical modeling.
4. Description of the general preparation of the student: The relevant requirements of student’s preparation to the course project are fully satisfied. Project proposal was very impressive.

5. The main disadvantages of the graduation project are: In the students graduation project there are some grammatical mistakes, but implementation of the projet itself is good and mistakes does not reduce the delivery quality.
6. Ability to put into practice or present the results of the graduation project and its sections for production: Results obtained during the graduation project can be used invarious sectors of our country, for example in educational field sector.
7. Technical and theoretical training of the future specialist: Technical and theoretical preparation of the student Resul Gulov are excellent and great. The degree of readiness of the graduation project to be submitted to the state test team and the evaluation of the observer: The theme “Mathematical Modeling in Computer Science” implemented in graduation project of student Resul Gulov fully satisfies requirements of course projects of technical high educational institutions.

Supervisor Eziz Kakyshov  
(place of employment, position, full name, signature)

Oguzhan Engineering and Technology University of Turkmenistan Head of Computer  
Sciences and Information Technologies Department

\_\_\_\_\_ 20 y.

**THE ACADEMY OF SCIENCES OF TURKMENISTAN OGUZHAN  
ENGINEERING TECHNOLOGY UNIVERSITY OF TURKMENISTAN  
REVIEW OF THE GRADUATION PROJECT**

Student – author of the graduation project: Resul Gulov

*(full name)*

Topic of the graduation project: “Mathematical Modeling in Computer Science”

Specialty: Applied mathematics and informatics

Volume of the graduation project: 10

Number of the drawings:

Number of pages of description:

Number of the pages of the content:

1. Significance of the thesis topic and accepted solutions: The decisions taken in the graduation project demonstrates the management of Development of «Mathematical Modeling in Computer Science» in our country during the transition to the digital economy and the development of appropriate software.
2. Justification of the solutions in the graduation project (properties and use of achievements of leading experience, science and technology, manufacturing):  
Development of «Mathematical Modeling in Computer Science» project is a Clearly defined problem statement or research question that the project aims to address within the field of computer science using mathematical modeling
3. Level and quality of drawings and content chapters: The level of execution of the graduation project drawings and components fully meets the requirements of the course for technical higher education institutions.
4. Quality of the economic part of the graduation project: The level of implementation of the graduation project’s economic department needs the relevant requirements
5. Main drawbacks of the graduation project: In the students graduation project there are some grammatical mistakes, but implementation of the projet itself is good and mistakes does not reduce the delivery quality.



6. Opportunities to submit for publication or to integrate the graduation project and its chapters into the manufacturing: Results obtained during the graduation project can be used in various sectors of our country, for example in educational field sector.

7. Technical and theoretical training of the future specialist: Technical and theoretical of the student Resul Gulov are excellent and great.

8. Level of readiness of the graduation project for presenting to the state examination committee and the evaluation grade of the reviewer:

Student Resul Gulov's "Mathematical Modeling in Computer Science" project fully meets the requirements of graduation projects in technical universities.

Author of the review: Eziz Kakyshov  
(academic degree and full name)

Oguzhan Engineering and Technology University of Turkmenistan  
(place of employment)

Applied Mathematics and Informatics Department  
(specialty, position)

\_\_\_\_\_  
(signature)

„\_\_\_\_” \_\_\_\_\_ 2023

**THE ACADEMY OF SCIENCES OF  
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TECHNOLOGY UNIVERSITY OF  
TURKMENISTAN**

Faculty

department

SOUND

Student – author of the graduation project: Resul Gulov  
*(full name)*

Topic of the graduation project: “Mathematical Modeling in Computer Science”  
Volume of the graduation project: 10  
Number of the drawings:  
Number of pages of description:

1. Content of the graduation project: Overview of mathematical modeling in computer science. Review of existing models and approaches. Identification of gaps in the literature.
2. Advantages of the graduation project: Allows students to apply theoretical knowledge gained throughout their academic program to solve real-world problems.
3. Preparation of the graduation project: The preparation of the graduation project is at high level.
4. Characterization of the student's overall preparation: Ready to defend her graduation project.

Leader: Eziz Kakyshov  
*(place of employment, position, full name, signature)*

Oguzhan Engineering and Technology University of Turkmenistan  
*(place of employment)*

Head of Computer Sciences and Information Technologies Department  
*(specialty, position)*

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