O‘ZBEKISTON RESPUBLIKASI
VAZIRLAR MAHKAMASI HUZURIDAGI
DAVLAT TEST MARKAZI

STATE TEST CENTER UNDER THE
CABINET OF MINISTERS OF THE
REPUBLIC OF UZBEKISTAN

CHET TILINI BILISH DARAJASI TO‘G‘RISIDA

SERTIFIKAT
CERTIFICATE

OF FOREIGN LANGUAGE PROFICIENCY

Sertifikat № | Reference Number: **22DTM1014187IF**

Talabgor to‘g‘risidagi ma’lumot | Candidate Details

Shaxsni tasdiqlovchi hujjat seriyasi va raqami | ID series and number: **AA 8779876**

Familiyasi | Surname: **ISRAILOVA**

Ismi | First Name: **FERUZA**

Otasining ismi | Patronymic Name: **AKBAR QIZI**

Chet tili | Foreign Language: **INGLIZ TILI**

Daraja | Level: **B2**

Test sinovi natijalari | Test Results

Tinglab tushunish | Listening	51	O‘qish | Reading	48	Umumiy ball | Overall Score: 51
Yozish | Writing	47	Gapirish | Speaking	56	

Berilgan sanasi | Date of Issue: **05.07.2022**

Amal qilish muddati | Valid until: **04.07.2024**

Direktor | Director

M.KARIMOV

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION
OF THE REPUBLIC OF UZBEKISTAN
CHIRCHIK STATE PEDAGOGICAL UNIVERSITY

"Approved by"
Acting vice-rector for
academic affairs
_____ D.B.Akhmadjanov
2023 year "29" 05

SYLLABUS
OF GEOMETRY
(Form of education: full-time 1-course)

Field of knowledge:	100000 – Education
Field of study:	110000 – Education
Areas of study:	60110600 – Mathematics and informatics

Chirchik – 2023 y.

Syllabus of subject

Academic year:	2023/2024		
Subject name:	Geometry 1		
Subject type:	Compulsory		
Subject code:	GEOM1128		
Year:	4		
Form of education:	Full-time		
Type of education:	Bachelor degree		
Course format and semester hours:	**Total**	**1st semester**	**2nd semester**
	270	150	120
Lecture	**60**	30	30
Practical lesson	**60**	30	30
Laboratory lesson	—	—	—
Seminar	—	—	—
Self-study	**150**	90	60
Amount of credit:	**9**	5	4
Evaluation form:	**Summative**	Exam	Exam
	Final control	Exam	Exam
Responsible department for subject:	**Methodology of teaching mathematics and geometry**		

Information about the teacher of subject

Teacher:	Islomov San'at Mash'al o'g'li
E-mail:	Islomovsanat9313@gmail.com
Phone number	(99) 3919300
Organization:	Chirchik State Pedagogical University, Department " Methodology of teaching mathematics and geometry "
Reviewers:	A.Bayturayev. Associate Professor, Department of Geometry and Topology, UzMU D.M.Maxmudova - Dean of the Faculty of Mathematics and Informatics of ChDPU.

The purpose of subject (PS)	
PS1	Introducing students to the basics of modern mathematics, consciously researching issues related to professional activity, the main content of the geometry course is to teach vectors, second-order lines, equations of straight lines in the plane, straight lines in space.

Basic knowledge necessary for learning subject	
1.	Elementary algebra
2.	Elementary geometry

Educational results (ER)	
	In terms of knowledge perspective:
ER1	Demonstrate a deep understanding of geometry concepts and principles;
ER2	Ability to deeply analyze the essence of geometry methods;
ER3	Must be able to use appropriate Geometry tools to solve problems in professional activities.
ER4	he should know how to protect the interests of man and society in the use of technologies in the information society.
	In terms of skills:
ER5	have knowledge, skills and abilities in the field of geometry in future professional activities;
ER6	the opportunity to participate in scientific research;
ER7	mastering methods for selecting and using information on social networks on the Internet;
ER8	make independent decisions in their professional activities;

Subject content		
Form of education: Lecture (L)		**Hours**
1st semester		
L1	Concept of vectors, linear operations on vectors. Linear connectivity of vectors. Coordinates of vectors	2
L2	Scalar product of two vectors. Vector product of two vectors.	2
L3	Mixed product of three vectors	2
L4	An affine coordinate system in the plane. Plane orientation	2
L5	Switching affine and Cartesian coordinate systems in the plane	2
L6	Polar coordinate system. Spherical and cylindrical coordinate system.	2
L7	Different equations of a straight line in a plane	2

L8	Interposition of straight lines in a plane. The distance from a point to a straight line	2
	Summative	
L9	Second order lines, Ellipse	2
L10	Hyperbole	2
L11	Parabola	2
L12	Derivatives of Ellipse and Parabola. Equations of second-order lines in polar coordinates.	2
L13	General equation of the second order line	2
L14	Simplification of the general equation of the second order line. Graphing	2
L15	The center of the second order line. Intersection with a straight line.	2
	Final control	
Total		**30**
Form of education: Practical lesson (P)		
1st semester		
P1	The concept of vectors is linear operations on vectors. Linear connectivity of vectors. Examples of coordinates of vectors	2
P2	Scalar product of two vectors. Examples of vector multiplication of two vectors	2
P3	Examples of mixed product of three vectors	2
P4	An affine coordinate system in the plane. Examples of plane orientation	2
P5	Examples of replacing affine and Cartesian coordinate systems in the plane	2
P6	Polar coordinate system. Examples of spherical and cylindrical coordinate systems	2
P7	Examples of different equations of a straight line in a plane	2
P8	Interposition of straight lines in a plane. Examples of the distance from a point to a straight line	2
P9	Second order lines, examples of ellipses	2
P10	Examples of hyperbole	2
P11	Parabola examples	2
P12	Derivatives of Ellipse and Parabola. Examples of equations of second-order lines in polar coordinates	2
P13	Examples of the general equation of the second order line	2
P14	Simplification of the general equation of the second order line. Examples of graphing	2
P15	The center of the second order line. Examples of intersection with a straight line	2
Total		**30**

Form of education: Lecture (L)		Hours
2nd semester		
L1	Asymptotic directions. Experiment and asymptotes.	2
L2	Diameters of the line of the second order. Main directions.	2
L3	A plane in space. Different equations of a plane in space.	2
L4	Different equations of a straight line in space.	2
L5	Interposition of a straight line and a plane. Angle between two straight lines.	2
L6	Second order surfaces. Intersection of second-order surfaces with straight lines and planes	2
L7	Spherical surfaces. Second order cylindrical surfaces	2
L8	Second order conical surfaces. Conic Sections	2
	Summative	
L9	Circular surfaces Ellipsoid, Hyperboloid, Paraboloid and its properties.	2
L10	Rectilinear generators of quadratic surfaces, Trial plane of quadratic surface.	2
L11	Axioms of construction using a circle and a ruler. The main steps in solving construction problems. Elementary issues	2
L12	Problems to be solved directly. Methods of correction and geometric positions for solving construction problems.	2
L13	Axial symmetry. Parallel translation and turning methods	2
L14	Homeopathy method. Inversion method Algebraic method.	2
L15	Criterion for solving construction problems using a circle and a ruler.	2
	Final control	
Totally		**30**
Form of education: Practical lesson (P)		
2nd semester		
P1	Asymptotic directions. Examples of trials and asymptotes	2
P2	Diameters of the line of the second order. Examples of main directions	2
P3	A plane in space. Examples of different equations of a plane in space	2
P4	Examples of different equations of a straight line in space	2
P5	Interposition of a straight line and a plane. Examples of the angle between two straight lines	2
P6	Second order surfaces. Examples of intersection of second-order surfaces with straight lines and planes	2
P7	Spherical surfaces Examples of cylindrical surfaces of the second order	2
P8	Conic surfaces of the second order. Examples of conic sections	2

P9	Examples of circular surfaces Ellipsoid, Hyperboloid, Paraboloid and its properties	2
P10	Rectilinear Generators of Quadratic Surfaces, Examples of Tried Planes of Quadratic Surfaces	2
P11	Axioms of construction using a circle and a ruler. The main steps in solving construction problems. Examples of elementary problems	2
P12	Problems to be solved directly Examples of methods of correction and geometric positions for solving constructional problems	2
P13	Axial symmetry Examples of parallel translation and rotation methods	2
P14	Homeopathy method. Inversion method Algebraic method examples	2
P15	Examples of criteria for solving design problems using a circle and a ruler	2
Total		**30**

Self-study (SS) 1st semester		
SS1	Linear relationship of vectors. Vector space and its size.	2
SS2	Scalar multiplication of vectors and their properties	2
SS3	Orientation of the plane. Switching between affine and Cartesian coordinate systems.	2
SS4	A straight line in a rectangular Cartesian coordinate system and related metric problems.	4
SS5	Types of movement in the plane	2
SS6	Generalized formulas of movement types	4
SS7	View similar substitution as homothety and motion multiplication.	2
SS8	Equations of second-order lines in polar coordinates.	6
SS9	Converting the general equation of the second order line to the canonical form.	2
SS10	Asymptotic directions, trial and asymptotes.	4
SS11	Rectangular Cartesian coordinate system and other coordinate systems in space.	8
SS12	Checking the general equation of the plane. The geometric meaning of the polynomial sign Ax+By+Cz+D.	4
SS13	Mutual situation of a plane and a straight line in space.	2
SS14	Intersection of second-order surfaces with straight lines and planes.	2
SS15	Cylindrical and conical surfaces of the second order.	4
SS16	Rotating surfaces.	2
SS17	n-dimensional vector and affine spaces	4
SS18	k -dimensional plane. Affine permutations	2
SS19	Convex polygons and polyhedra	2
SS20	Descartes-Euler theorem for convex polynomials	4

SS21	Linear and square forms. A normal view of a square shape. Quadrics in affine space	2
SS22	Quadrics in Euclidean space	2
SS23	A historical review of the foundations of geometry. Euclid's "Fundamentals".	4
SS24	Second order lines, examples of ellipses	2
SS25	Examples of hyperbole	2
SS26	Parabola examples	2
SS27	Derivatives of Ellipse and Parabola. Examples of equations of second-order lines in polar coordinates	4
SS28	Examples of the general equation of the second order line	4
SS29	Simplification of the general equation of the second order line. Examples of making	2
SS30	The center of the second order line. Examples of intersection with a straight line	2
Total		**90**

Self-study (SS) 2nd semester		
SS1	Congruence axioms and their implications. Axiom of Continuity	2
SS2	Axiom of parallelism.	2
SS3	System of Lobachevsky axioms in the plane	2
SS4	Diverging straight lines and their properties	2
SS5	Curves in the Lobachevsky plane. Different models of the Lobachevsky plane.	2
SS6	Pogorelov's axioms. Weyl's system of axioms.	2
SS7	Requirements for the system of axioms. Axiom of parallelism. Riemannian geometry	2
SS8	Problems on making triangles	2
SS9	Questions about making a rectangle	2
SS10	Problems related to the method of geometric positions	2
SS11	Solving problems by the symmetry method	2
SS12	Apollonian issues	2
SS13	Inversion method	2
SS14	Central and parallel projection. Perspective affine correspondence of two planes.	2
SS15	Homogeneous figures and orthogonal projections.	2
SS16	Axonometry. Creating images of flat and three-dimensional figures by the method of parallel projection.	2
SS17	A positional issue. Solid and non-solid images.	2
SS18	Complex ratio of four points. Harmonic four of points.	2
SS19	Binary ratio of points on an extended Euclidean straight line	2
SS20	Projective plane.	2
SS21	The principle of duality. Desargues theorem.	2

SS22	Binary ratio of points and straight lines in a plane.	2
SS23	Examples of circular surfaces Ellipsoid, Hyperboloid, Paraboloid and its properties	2
SS24	Rectilinear Generators of Quadratic Surfaces, Examples of Tried Planes of Quadratic Surfaces	2
SS25	Axioms of construction using a circle and a ruler. The main steps in solving construction problems. Examples of elementary problems	2
SS26	Problems to be solved directly Examples of methods of correction and geometric positions for solving constructional problems	2
SS27	Axial symmetry Examples of parallel translation and rotation methods	2
SS28	Homeopathy method. Inversion method Algebraic method examples	2
SS29	A positional issue. Solid and non-solid images.	2
SS30	Examples of criteria for solving design problems using a circle and a ruler	2
	Total:	**60**

VIII. Requirements for obtaining a credit:

Full mastery of theoretical and practical concepts of science, ability to correctly reflect the results of analysis, independent observation of the studied processes, creation and current, intermediate control forms of tasks and assignments given in writing or orally execution, passing tests on final control.

IX. Criteria for evaluation and control of student knowledge in science

The educational results of students are evaluated in a 100-point rating system. The conversion of points for the educational results by students is carried out on the basis of the YeCTS (European Credit Transfer System) system.

Points for evaluation of educational results are determined in the following order:

Auditorium lessons for the completion of assigned tasks - current assessment (CA); Assessment of self-study on completing independent learning tasks (ASS);	For answers during the intermediate control - intermediate control assessment (ICA);	For answers during the final control - final control assessment (FCA)
The maximum score of the current control 15+15=***30 score:*** ΣCC = CA + ASS	***The maximum score of the intermediate control 20 score:*** ΣIC = ICA + ASS	***The maximum score of the final control(FCA) 50 score.***

A student is allowed to pass the final exam when he has a score higher than ΣCC + ΣIC > 30

Mastery indicator from the module (subject).
(MI):
ΣMI= ΣCC+ ΣIC + FCA

The module (subject) is considered mastered when a score higher than ΣMI≥ 60 score.				
Criteria for assessing the educational results of students:				
Level	**5 score system (point)**	**Appropriation in percent**	**In traditional**	**Assessment criteria**
For the education department		**For professors and teachers**		
A+	**4,51 – 5**	91 - 100	Excellent	The student quickly learns the material independently: he does not make mistakes; actively participates in training; answers questions completely and clearly.
A	**4,26 – 4,5**	86 – 90		the student learns the materials independently: does not make mistakes; answers questions completely and clearly.
B+	**4,01–4,25**	81 – 85	Good	the student has mastered the material well, can express it logically; actively participates in training; answers questions completely and accurately, but makes minor mistakes.
B	**3,51 – 4,0**	71 – 80		the student has mastered the material well, answers the questions fully and accurately, but makes minor mistakes.
C+	**3,26 – 3,5**	66 – 70	Satisfactory	knows basic material but struggles to express clearly; answers to questions lack accuracy and completeness; makes some mistakes in the presentation of materials; feels difficulty in the process of communication.
C	**3,0 – 3,25**	60 – 65		knows basic material but struggles to express clearly; answers to questions lack accuracy and completeness;

				makes some mistakes in the presentation of materials;
F	**Below 3,0**	Below 59	not satisfactory	did not master the materials; cannot answer questions; does not participate in training

Basic and additional educational literature and information sources

	Basic literature
1.	S.V.Baxvalov, P.S.Modenov, A.S.Parxomenko geometry tasks book
2.	Narmanov Abdig'appor Yakubovich "Analytical geometry "
3.	Н.Д. Додажонов, М.Ш. Жўра "Geometry"
	Additional literature
1.	А.Г.Курош Олий алгебра курси, Т. Ўқитувчи, 1976.
2.	Р.Искандаров Олий алгебра курси 1 қисм, Т. Ўқитувчи 1977.
3.	Д.В.Клетеник Сборник задач по аналитической геометрии Наука, 1972
4.	И.Я.Бакельман Аналитик геометрия ва чизиқли алгебра. Ўқитувчи, 1978.
5.	А.В. Проскуряков Сборник задач по линейной алгебре, М., Наука, 1978.
6.	П.С.Александров Курс аналитической геометрии и линейной. алгебры . Наука, 1979.
7.	Yo.U.Soatov. Oliy matematika, O'zbekiston, 1998.
8.	V.A. Ilin, Э.G.Poznyak Lineynaya algebra Nauka, 1984
	Internet sites
1.	www.cspi.uz – CHDPU sayti
2.	www.ziyonet.uz – O'zbekiston Respublikasi axborot ta'lim tarmog'i
3.	www.edu.uz - O'zbekiston Respublikasi Oliy ta'lim, fan va innovatsiyalar vazirligi rasmiy veb sayti
4.	www.mathedu.ru – Matematik ta'lim bo'yicha elektron kutubxona

This Syllabus was approved by the " Methodology of teaching mathematics and geometry " department dated 28 - 08 2023 of the meeting No. 1.

This Syllabus was approved by the Council of the Chirchik State Pedagogical University dated 29 - 08 2023 of the meeting No. 1

Head of the educational and

methodological department	**M.Boltayev**
The dean of the faculty	**D.M.Makhmudova**
The head of the department	**D.M.Makhmudova**
Teacher	**S.M.Islomov**