都立国際高校　年間授業計画／Tokyo Metropolitan Kokusai High School　Course Syllabus

○ 科目基礎情報 (Course information)

開講年度	(Academic year)	令和8年度 (2026 年度)
開講学科	(Department)	国際学科国際バカロレアコース／IBDP(International Baccalaureate Diploma Programme)
教科	(Subject Area)	数学
科目	(Subject)	数学Ⅰ (Mathematcis I)
学年･クラス	(Grade･Class)	FY
単位数	(Number of units)	3
使用教科書	(Text Books)	高等学校 数学Ⅰ（数研出版） Mathematics Core Topics HL (Haese Mathematics)
校外学習	(Field trip)	

○ 教科の目標 (Goals of the subject area)

【知　識　及　び　技　能】 (Knowledge and Skills)
Develop a systematic understanding of fundamental concepts, principles, and laws in mathematics, while acquiring the ability to mathematize real-world situations, interpret them mathematically, and represent and process them using appropriate mathematical methods.

【思考力、判断力、表現力等】 (Ability to think, make judgements, express themselves)
Develop the ability to use mathematics to analyze situations logically, recognize the essential features of phenomena and their relationships with others, consider them in an integrated and evolving manner, and express situations concisely, clearly, and accurately using mathematical representations.

【学びに向かう力、人間性等】 (Motivation to learn, Humanity)
Develop an appreciation of the value of mathematics and a willingness to apply it actively; think persistently and make judgments based on mathematical reasoning; and reflect on the problem-solving process to deepen understanding, evaluate and improve one's approach, and foster the foundations of creativity.

○ 科目の目標 (Goals of the subject)

【知識及び技能】 (Knowledge and Skills)	【思考力、判断力、表現力等】 (Ability to think, make judgements, express themselves)	【学びに向かう力、人間性等】 (Motivation to learn, Humanity)
Develop a systematic understanding of the fundamental concepts, principles, and laws related to numbers and expressions, geometry and measurement, quadratic functions, and data analysis, while acquiring the ability to mathematize situations, interpret them mathematically, and represent and process them using appropriate mathematical methods.	Develop the ability to focus on the conditions and conclusions of propositions; to view numbers and expressions from multiple perspectives and transform them appropriately according to purpose; to focus on relationships among the components of figures and logically examine and express their properties and measurements; to focus on functional relationships, accurately represent situations, and analyze their characteristics by linking tables, expressions, and graphs; and to formulate problems based on real-world situations, analyze them by selecting appropriate methods with attention to data variability and relationships between variables, solve them, and critically evaluate the processes and results.	Develop an appreciation of the value of mathematics and a willingness to apply it; think persistently and make judgments based on mathematical reasoning; and reflect on the problem-solving process to deepen understanding, evaluate and improve one's approach, and foster the foundations of creativity.

○ 授業計画 (Course schedule)

	単元の具体的な指導目標 Unit Objectives	指導項目・内容 Topic / Contents	評価規準 Evaluation Criteria	知 ❶	思 ❷	態 ❸	Allotted hours 配当時数
	<Algebra> 【Knowledge and Skills】 ・Real numbers; the four basic operations involving simple irrational numbers ・Quadratic identities (expansion formulas) and factorization formulas ・Properties of inequalities; solutions of linear inequalities 【Thinking, Judgment, and Expression】 ・Interpreting expressions from multiple perspectives and transforming them appropriately ・Examining methods for solving linear inequalities ・Applying linear inequalities to problem-solving	・Addition and subtraction of polynomials ・Multiplication of polynomials ・Factorization ・Real numbers ・Calculations involving radicals ・Properties of inequalities ・Linear inequalities ・Equations and inequalities involving absolute values	❶【Knowledge and Skills】 Demonstrates an understanding of fundamental concepts, principles, and laws related to numbers and expressions, and has acquired the necessary knowledge and skills. ❷【Thinking, Judgment, and Expression】 Is able to represent and analyze situations mathematically, view expressions from multiple perspectives, and apply them to problem-solving. Can perform calculations involving simple irrational numbers and accurately represent and manipulate quantitative relationships using algebraic expressions. ❸【Attitude toward Learning】 Shows interest in numbers and expressions, recognizes the value of mathematics, and actively seeks to apply it to the analysis of a variety of situations.	○	○	○	24
	Examination			○	○	○	1
	<Quadratic Functions> 【Knowledge and Skills】 ・Sets and propositions 【Thinking, Judgment, and Expression】 ・Proving simple propositions	・Sets ・Propositions and conditions ・Propositions and proofs	❶【Knowledge and Skills】 Demonstrates an understanding of fundamental concepts, principles, and laws related to sets and propositions, and has acquired the necessary knowledge and skills. ❷【Thinking, Judgment, and Expression】 Is able to represent and analyze situations mathematically, view expressions from multiple perspectives, and apply them to the analysis of situations. Can derive new propositions from given ones. ❸【Attitude toward Learning】 Shows interest in sets and propositions, recognizes the value of mathematics, and actively seeks to apply them to the analysis of a variety of situations.	○	○	○	16
	Examination			○	○	○	1

	単元の具体的な指導目標 Unit Objectives	指導項目・内容 Topic / Contents	評価規準 Evaluation Criteria	知 ❶	思 ❷	態 ❸	配当 時数
2学期（2nd semester）	【Knowledge and Skills】 ・Variation of quadratic functions and characteristics of their graphs ・Maximum and minimum values of quadratic functions ・Relationships between solutions of quadratic equations and graphs of quadratic functions; relationships between solutions of quadratic inequalities and graphs of quadratic functions 【Thinking, Judgment, and Expression】 ・Examining the relationship between quadratic expressions and their graphs from multiple perspectives ・Interpreting situations mathematically and solving problems	・Functions and graphs ・Graphs of quadratic functions ・Maximum and minimum values of quadratic functions ・Determining quadratic functions ・Quadratic equations ・Relationships between graphs of quadratic functions and the x-axis ・Quadratic inequalities	❶【Knowledge and Skills】 Demonstrates an understanding of fundamental concepts, principles, and laws related to quadratic functions, their graphs, and changes in function values, and has acquired the necessary knowledge and skills. ❷【Thinking, Judgment, and Expression】 Is able to represent and analyze situations using quadratic functions and reflect on the process, thereby developing functional ways of thinking. Can express changes in quantities using quadratic functions and examine changes in function values. ❸【Attitude toward Learning】 Shows interest in quadratic functions, their graphs, and changes in function values, recognizes the usefulness of representing quantitative change using functions, and actively seeks to apply them to the analysis of a variety of situations.	○	○	○	26
	定期考査 Examination			○	○	○	1
	<Trigonometry> 【Knowledge and Skills】 ・Trigonometric ratios of acute angles and their relationships ・Trigonometric ratios of obtuse angles The Law of Sines and the Law of Cosines 【Thinking, Judgment, and Expression】 ・Deriving relationships among elements as theorems and formulas ・Interpreting situations mathematically and solving problems	・Trigonometric ratios ・Relationships among trigonometric ratios ・Extension of trigonometric ratios ・The Law of Sines ・The Law of Cosines ・Applications of the Law of Sines and the Law of Cosines ・Area of triangles ・Applications to solid geometry	❶【Knowledge and Skills】 Demonstrates an understanding of the meaning of trigonometric ratios in right triangles, the significance of extending them to obtuse angles, and the fundamental properties of measurement in geometry, and has acquired the necessary knowledge and skills. ❷【Thinking, Judgment, and Expression】 Is able to represent and analyze situations using trigonometric ratios and reflect on the thinking process, thereby developing mathematical ways of thinking for measuring quantities such as angles. Has acquired the ability to represent and process situations using trigonometric ratios, as well as methods of reasoning. ❸【Attitude toward Learning】 Shows interest in measurement involving angles and related concepts, recognizes their usefulness, and actively seeks to apply them to the analysis of a variety of situations.	○	○	○	20
	定期考査 Examination			○	○	○	1
3学期（3rd semester）	<Statistics> 【Knowledge and Skills】 ・Variance, standard deviation, scatter plots, and correlation coefficients ・Organizing data into tables and graphs; calculating basic statistical measures ・The concept of hypothesis testing 【Thinking, Judgment, and Expression】 ・Examining methods for quantifying variability and trends ・Collecting and analyzing data, and representing its characteristics ・Evaluating the validity of claims and engaging in critical analysis	・Organizing data ・Measures of central tendency ・Data dispersion and quartiles ・Variance and standard deviation ・Relationships between two variables ・The concept of hypothesis testing	❶【Knowledge and Skills】 Demonstrates an understanding of fundamental concepts, principles, and laws related to data analysis, and has acquired the necessary knowledge and skills. ❷【Thinking, Judgment, and Expression】 Is able to represent and analyze situations using data and accurately describe their trends. Has acquired the ability to represent and process situations using data, as well as methods for identifying patterns and trends. ❸【Attitude toward Learning】 Shows interest in data variability and correlation, recognizes the value of statistical thinking, and actively seeks to apply it to the analysis of a variety of situations.	○	○	○	26
	定期考査 Examination			○	○	○	1

総授業時数 Total hours	117