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4年度/2022年度		
開講学科/Department			国際学科国際パカロレアコース/IBDP(International Baccalaureate Diploma Programme)		
教科/Subject			Mathematics Analysis and Approaches Standard Level (DP1)		
科目/Course Title		科目/Course Title	Mathematics Analysis and Approaches Standard Level (DP1)		
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単位数/credits			4		
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講座概要/Course description		講座概要/Course description	This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course (for example, functions, trigonometry, calculus) as well as topics that are amenable to investigation, conjecture and proof, for instance the study of sequences and series.		
到達目標/Course objectives		到達目標/Course objectives	Enjoy mathematics and develop an appreciacion of the elegance and power of mathematics. Develop un understanding of the principles and natures of mathematics, develop logical, critical and creative thinking. Employ and refine powers of abstraction and generalization.		
評価方法と評価基準/ Evaluation method and criteria		評価方法と評価基準/ Evaluation method and criteria	1. Knowledge and Understanding 2. Problem solving 3. Communication and Interptretation 4. Technology 5. Reasoning 6. Inquiry Approaches		
教科書/Textbooks		教科書/Textbooks	Mathematics: Analysis and Approaches for the IB Diploma, Standard Level, Pearson		
		校外学習/Field trip			
授集計圖/Course schedule					
		指導項目/Topic	指導內容/Contents	評価の方法・基準/Evaluation method and criteria	予定時数/ Alotted hours
	4月	Functions and their Graphs	Students will distinguish different types of functions and draw appropriate graphs both by hand and using a GDC. Students will compare and contrast different types of functions and verify results.	Homeworks, Quizzes, Take-Home Assignments, Examinations	10
		Reciprocal functions, rational functions.	Students will practice graphing and analyzing reciprocal and rational functions. Students will learn about horizontal and vertical asymptotes.		4
	58	Exponentials and Logarithms	Students will be able to understand and state the different properties of both exponential and logarithmic expressions and solve equations using these properties.		6
semester	071	Sequences and Series	Students will understand the difference between an antimetic and geometers equence (and series) and, after comparing the two, apply the appropriate formulae to each. Students will solve a range of questions including applications to real events both algebraically and through the use of graphical display calculators (GDCs).		6
学期/1st :		Binomial theorem	and prove results based upon these connections.		4
1	6	Applications of sequences and series	Students will learn about growth and decay in the context of sequences and series. They will learn of simple and compound interest and develop the relevant formulae		6
	月	Trigonometric reatios and applications of right and non-right angled trigonometry	Students will review trigonometric ratios and learn how to apply them to solve problems in right and non-right angled trigonometry.		14
	7月	Trigonometric functions, equations and identities	Students will understand the concept of radians as an alternative measurement to degrees and link this to prior knowledge to solve questions in radians. Students will learn trigonometric identities and methods to solve trigonometric equations.		8
		Differential Calculus	Students will understand the concept of limits, and they will compare and contrast a range of functions to determine which differentiation rules should be used.		10
ster	9月	Integral Calculus	Students will understand integration as the opposite process of differentiation and calculate basic integrals.		8
est semes	10 月	Further Integral Calculus	Students will learn more integration technics as well as how to find areas under curves.		18
2学期/2	11 月	Further Differential and Integral Calculus	Students will learn how to apply the techniques learned to optimization and kinematics problems in a variety of contexts.		12
	12 月	Review and working on IA	Students will review materials learned and work on their internal assessments.		12
mester	1 月	Basic Probability and Statistics	Students will be able to state the laws of probability and deduce the probability of certain events based on the information provided. Students will confirm their knowledge of statistics and apply this knowledge to calculate various examination style questions, both with and without a GDC.		10
兌 prq 段	2 月	Statistic and Probability	Students will solve a range of real world applications involving probability density functions and distributions using a GDS.		14
きの	3 月	Further Statistics and Review	Students will learn more distributions problems and review materials learned		14

総授業時数/Total hours 156