Deutsche Schule Izmir
Privatschule der Deutschen Botschaft Ankara
Zweigstelle Izmir

Exzellente Deutsche Auslandsschule

IB MATHEMATICS: ANALYSIS & APPROACHES (SL)
SUBJECT BRIEF

Course description and aims:

Mathematics provides a unique language to describe, explore and communicate the nature of the world we live in. The course "Mathematics: analysis & approaches" recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics and includes topics that are both traditionally part of a pre-university mathematics course as well as topics that are needed for the exploration of mathematical investigation, conjecture, and proof. "Mathematics: analysis and approaches" has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments. Students will get develop insight into mathematical form and structure and have to recognize the links between mathematical concepts in different topic areas. The internally assessed exploration allows students to develop independence in mathematical learning. Throughout the course students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

The aims of all DP mathematics courses are to enable students to:

1. develop a curiosity and enjoyment of mathematics, and appreciate its elegance and power
2. develop an understanding of the concepts, principles, and nature of mathematics
3. communicate mathematics clearly, concisely, and confidently in a variety of contexts
4. develop logical and creative thinking, and patience and persistence in problem solving to instil confidence in using mathematics
5. employ and refine their powers of abstraction and generalization
6. take action to apply and transfer skills to alternative situations, to other areas of knowledge and to future developments in their local and global communities
7. appreciate how developments in technology and mathematics influence each other
8. appreciate the moral, social and ethical questions arising from the work of mathematicians and the applications of mathematics
9. appreciate the universality of mathematics and its multicultural, international, and historical perspectives
10. appreciate the contribution of mathematics too the disciplines, and as a particular "area of knowledge" in the TOK course
11. develop the ability to reflect critically up on their own work and the work of others
12. independently and collaboratively extend their understanding of mathematics.

Syllabus outline and content:

Core

1. Number and algebra
2. Functions
3. Geometry and trigonometry
4. Statistics and probability
5. Calculus

Skills:

Development of investigational, problem-solving, and modelling skills and the exploration of an area of mathematics

Assessment Information:

External:

Paper 1
(Section A: compulsory short-response questions based on the syllabus.
Section B: compulsory extended-response questions based on the syllabus.)

Duration: 90 min / Weighting: 40%
Marks: 80

Paper 2
(Technology allowed.
Section A: compulsory short-response questions based on the syllabus.
Section B: compulsory extended-response questions based on the syllabus.)

Duration: 90 min /Weighting: 40%
Marks: 80

Internal:

Mathematical Exploration

Duration: 15h / Weighting: 20%

Sources: IB DP Course selection guidance
https://www.ibo.org/programmes/diploma-programme/curriculum/mathematics/

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