



Katedraliskolan Skara IB Diploma Programme



Mathematical Studies SL (first exams 2014)

General course description

Mathematics is a wide subject for different needs, ranging from everyday life situations of buying food and services to advanced scientific calculations. Mathematical Studies (Math Studies) has an emphasis of mathematical knowledge and applications with a focus of statistical and economical aspects and everyday life situations, using different tools (calculator, computer programs i.e).

Topics /core/options

All topics and sub-topics of the course are compulsory. The students are required to have prior learning of different mathematical areas (arithmetic, algebra, foreign currency, data collection, data representation, geometry, coordinate geometry, SI units i.e).

Numbers and algebra	20 h
Descriptive statistics	12 h
Statistical applications	17 h
Logic, sets and probability	20 h
Geometry and trigonometry	18 h
Mathematical models	20 h
Introduction to differential calculus	18 h
Project (Internal assessment)	25 h

Total teaching hours	150 h
----------------------	-------

Methods

A variety of methods is used to teach Math Studies both to reflect the IB learner profile and to engage the interest of all students. Mathematical concepts are taught in a variety of methods (lectures, practical investigations, result analysis, discussions and exercises) to develop understanding of fundamental mathematical concepts and skills. These concepts and skills are used for problem-solving and calculations in a wide range of contexts to further develop mathematical skills and reasoning.

A Math Studies student has an investigative approach to unfamiliar situations, shows knowledge and understanding in recalling, selecting and using concepts and techniques in known and unknown contexts. The student uses skills, concepts and models in varied contexts of problem-solving where communication and interpretation of the context have to



Katedralskolan Skara IB Diploma Programme



be transformed into mathematical operations, diagrams, graphs and models using mathematical notation. The accurate and efficient use of technology helps to explore and calculate different solutions. The student is familiar to drawing conclusions, testing validity and considering limitations in investigations as well as using argument and logical deduction in mathematical reasoning.

Throughout the course links are made to TOK (Theory of Knowledge) in different areas of Mathematics; Why do we need negative numbers? Are there different sizes of infinity? How do we know lines are parallel throughout the Universe? How can we use statistics to “prove our point”? Is it correlation or causation? Is Math an universal language?

Assessment

Internal

The project is an individual piece of work involving the collection of information or generation of measurements, and the analysis and evaluation of the information or measurement.

This component is internally assessed by the teacher and externally moderated by the IB at the end of the course and makes 20% of the final grade.

External

Paper 1 consists of 15 compulsory short-response questions based on the whole syllabus. Paper 2 consists of 6 compulsory extended-response questions based on the whole syllabus. The two papers are sent for external marking and each contribute to 40% of the final grade.

Course material/Textbook (if any)

P. Blythe, J. Fernsom, J. Forrest & P. Waldman de Tokman, *Mathematical Studies SL course companion* (2012). Oxford University Press

Teacher and email

Annemarie (Ammi) Matsson, ammi.matsson@skara.se

Further information

[Link to Diploma Programme Curriculum briefs](#)