

Mathematics SL Syllabus

2015-2017

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Course Description

Students who have basic mathematical concepts and skills and can apply simple math techniques correctly, and plan to study chemistry, economics, psychology or business administration may consider IB Math SL.

During the two year course students will cover the listed units and at the end of year two will take two external exams and will complete the Mathematical Exploration (internal assessment).

Units: *The following 16 units (Chapters) will be covered during the two year course*

Year 1

Unit 1: Functions

Unit 2: Quadratic Functions & Equations

Unit 3: Probability

Unit 4: Exponential and Logarithmic Functions

Unit 5: Rational Functions

Unit 6: Patterns, Sequences & Series

Unit 7: Limits & Derivatives

Unit 8: Descriptive Statistics

Unit 9: Integration (may be Year 2)

Unit 16: The Exploration

Year 2

Unit 10: Bivariate Analysis

Unit 11: Trigonometry

Unit 12: Vectors

Unit 13: Circular Functions

Unit 14: Calculus with trigonometric functions

Unit 15: Probability Distributions

Expected Outcomes

Generally, the outcome for an IB Graduate is to obtain the qualities outlined in the learner profile through the means of a holistic education that the IB provides. The program hopes to create students who are Inquirers, Knowledgeable, Thinkers, Communicators, Principled, Open-minded, Caring, Risk-takers, Balanced, and Reflective. Some outcomes (aims) specific to Group 5 subjects are as follows: enjoyment of mathematics, appreciation of the elegance and power of mathematics, and to be good communicators.

Assessments

External Assessment 3hrs (at the end of year 2):

Paper 1 (1 hr 30 min)

No calculator allowed. Section A: Compulsory short-response questions based on the whole syllabus. Section B: Compulsory extended-response questions based on the whole syllabus. (40%)

Paper 2 (1 hr 30 min)

GDC required. Section A: Compulsory short-response questions based on the whole syllabus. Section B: Compulsory extended-response questions based on the whole syllabus. (40%)

Internal assessment – Mathematical Exploration (20%)

It is an individual exploration that involves investigating an area of interest of mathematics. The exploration is assessed against 5 criteria that are related to the objectives for the course.

Teacher assessment:

Grade Boundaries 2015

Grade	From	To
1	0	14
2	15	30
3	31	43
4	44	55
5	56	68
6	69	81
7	82	100

40% Tests

30% Quizzes

10% Investigations

10% HW & Lesson Quizzes

10% Participation/Effort

For IB grading will be used the 7 point system.

Grade Descriptors

1 **Minimal** achievement in terms of the objectives.

2 **Very limited** achievement against all the objectives. The student has difficulty in understanding the required knowledge and skills and is **unable** to apply them fully in normal situations, **even with support**.

3 **Limited** achievement against most of the objectives, or clear difficulties in some areas. The student demonstrates a **limited understanding** of the required knowledge and skills and is **only able to apply** them fully in normal situations **with support**.

4 **A good general understanding** of the required knowledge and skills, and the ability to apply them effectively in **normal** situations. There is **occasional** evidence of the skills of analysis, synthesis and evaluation.

5 **A consistent and thorough understanding** of the required knowledge and skills, and the ability to apply them in a variety of situations. The student **generally** shows evidence of analysis, synthesis and evaluation where appropriate and **occasionally** demonstrates originality and insight.

6 A consistent and thorough understanding of the required knowledge and skills, and the ability to apply them in a **wide variety** of situations. There is **consistent** evidence of analysis, synthesis and evaluation where appropriate. The student **generally** demonstrates originality and insight.

7 A consistent and thorough understanding of the required knowledge and skills, and the ability to apply them **almost faultlessly** in a wide variety of situations. There is consistent evidence of analysis, synthesis and evaluation where appropriate. The student **consistently** demonstrates originality and insight and **always** produces **work of high quality**.

Class Materials

Each student must bring the following materials to class each day:

- (1) Textbook (students will be provided by FASNY): Oxford Mathematics SL: IB Diploma Programme
- (2) Pen
- (3) Pencil
- (4) TI83/84 Graphing Calculator (GDC)
- (5) Notebook and Unit Handouts
- (6) Binder to organize your files and handouts

Classroom Rules/Expectations

1. Come to class prepared.
2. Raise your hand to be acknowledged.
3. Ask questions.
4. Respect others and yourself.
5. Be honest.
6. Do your best.