

IB MATHEMATICS HIGHER LEVEL

Mercyhurst Preparatory School

2015 - 2016

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Course Description

This course is a covers a lot of mathematics. We will go through very varied mathematical topics such as statistics, differential calculus, vector theory and proof writing techniques. The goal is to give you an idea of the big themes and ideas in various branches of mathematics and how they vary in feel and in process.

Topic List: We will cover the following topics. We will work on the internal assessment which is our research paper while we study the topics.

Unit 1: Differential Calculus (including review of Limits)

Unit 2: Integral Calculus

Unit 3: Vector/Plane Algebra

Unit 4: Advanced Algebra Topics (complex numbers, mathematical induction, trigonometry)

Unit 5: Introduction to Statistics and Probability

Unit 6: Inferential Statistics

Homework and Practice IB Questions: Each lesson will have a homework assignment. Homework will either come from the textbook or be given to you as a handout. You will get some time at the end of each class to work on your homework. We will also look at a lot of practice IB questions. I may check the homework on the spot or may collect it.

Tests and quizzes: At the end of each topic we will have a test. We will also have a mid-unit quiz. I will review briefly for the test. You can prepare for the tests by looking over the homeworks and examples in the notes. I will not let you use any cheat sheets for the test, including the one provided to you for the IB EXAM. You should use a calculator for the test. (TI graphing calculator) Missed tests need to be made up in a timely manner.

Internal Assessment

Along with covering the material, you will also work on your exploration research project, known as the IB Internal Assessment. The project will take you a few months to complete and has to meet the IB criteria. We will spend a lot of time looking over the criteria for IA and read past projects. We will also spend some time exploring and choosing topics for research. The project is worth 20% of your IB Grade and will be worth about as much as two exam grades for your class grade.

Final Exam

Exempt from final exam are students taking the IB exam or (inclusive or) Seniors with an A in the class on May 2, 2016.

Grades

You and your parents can view your grades online live, right after I enter them. If you notice a mistake, see me right away. There are three terms in a school year and at the end of the year you will take a cumulative final exam. Your final grade will be determined by using the following formula:

$$\text{Final Grade} = (2 \cdot T1 + 2 \cdot T2 + 2 \cdot T3 + F) / 7$$

The letter grade break down at MPS is as follows:

	General/College Prep	Honors Course
A = 93 - 100%	4.0	5.0
B+ = 90 - 92%	3.5	4.5
B = 85 - 89%	3.0	4.0
C+ = 82 - 84%	2.5	3.5
C = 75 - 81%	2.0	3.0
D = 70 - 74%	1.0	1.0
F = 69 - Below	0.0	0.0

The IB Math Higher Level Exam is proctored **on three days: Tuesday May 10, 2016 (afternoon) , Wednesday May 11, 2016 (morning) and Wednesday, May 18 2016 (morning)** . The Internal Assessment is completed over the course of a few months and is mailed to IB mid-March.

Type of assessment	Format of assessment	Time (hours)	Weighting of final grade (%)
External		5	80
Paper 1 (non-calculator)	Section A: Compulsory short-response questions based on the core syllabus. Section B: Compulsory extended-response questions based on the core syllabus.	2	30
Paper 2 (graphical display calculator required)	Section A: Compulsory short-response questions based on the core syllabus. Section B: Compulsory extended-response questions based on the core syllabus.	2	30
Paper 3 (graphical display calculator required)	Compulsory extended-response questions based mainly on the syllabus options.	1	20
Internal			20
Mathematical exploration	The individual exploration is a piece of written work that involves investigating an area of mathematics.		

Our Paper 3 Option this year is “Statistics and Probability”

Extra Help and Tutoring If you need extra help with the material, you can come see me individually for special help. I will be in my classroom after school every day from 3:10 to 4:00.

You could also tutor Algebra students either in my room or in Math Lab (Room 120)

A note on Classroom Behavior

I expect you to treat your teacher and your fellow students with respect. I will not tolerate rude classroom disruptions. Let us create a safe, friendly environment conducive to learning, personal growth and getting to know one another. I want this class to be a positive experience for **everyone**.

I care very much about how you feel and how you learn in this class. Please feel free to talk to me or to write me if you want to discuss something.

LET'S HAVE A GREAT YEAR!!!!