

IB Mathematical Studies SL

Mr. Gulliford – Room 218

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Office hours availability: Monday and Friday after school.

General Course Description and Objectives:

IB Math Studies SL is a standard level IB course that surveys a wide range of topics. This course tests on all the topics that are expected for a Math Studies Student; however **not all topics are explicitly taught during this IB testing year**. We need to cover the new content that will be tested. The class is aligned to the final IB exam. All requirements will be met for the IB Exam during this course. It is expected that students registering for this course are taking the IB Exam. All work leads to this Exam and it is a culminating experience for the students. The Exam is extremely challenging and rewarding at the same time. Our class Exams look and feel like the actual IB Exam. It is assumed that some of the topics have been mastered at the C or better level from previous courses. The topics that are not explicitly taught are to be reviewed by the student. The Course also includes a Project generated by the student. This is a major piece of math work that is developed by the student early on in the course. These topics are from the IBO course guidelines.

TOPIC 1 - Introduction to the GDC (Graphic Display Calculator)

We will use this section to introduce you to the numerical, graphical and listing facilities of the GDC and we will make sure that you are familiar with commonly used buttons.

TOPIC 2 - Number and Algebra

In this section you will be introduced to some basic elements and concepts of mathematics. You must have a mastery of this section in order to be successful in the work for the rest of the course.

TOPIC 3 - Sets, logic and probability

The aim of this section is to enable you to understand the concept of a set and to use appropriate notation, to enable you to translate between verbal and symbolic statements, to introduce the principles of logic to analyze these statements, and to enable you to analyze random events.

TOPIC 4 - Functions

In this section you will develop an understanding of some of the functions that can be applied to practical situations.

TOPIC 5 - Geometry and trigonometry

This section will be used to develop your ability to draw clear diagrams, represent information given in two dimensions, and develop the ability to apply geometric and trigonometric techniques to problem solving.

TOPIC 6 - Statistics

The aims of this section are to introduce you to concepts that will prove useful in further studies of inferential statistics, and develop techniques to describe and analyze sets of data.

TOPIC 7 - Introductory differential calculus

This section will be used to introduce the concept of the gradient of the graph of a function, which is fundamental to the study of differential calculus, so that you can apply the concept of the derivative of a function to solving practical problems.

TOPIC 8 - Financial mathematics

In this section you will build a firm understanding of the concepts underlying certain financial transactions.

Text: Mathematics for the International Student: Mathematical Studies SL Second Edition by Haese & Harris and other supplemental materials.

Course Outline

I. Unit Title: Two Variable Statistics Review
Topics: Correlation, Regression and Chi-Square
Chapter 20

Specific Outcomes (Objectives/Standards)

Correlation
Least Squares Regression
Chi-Square Test of Independence
Normal Distribution

II. Unit Title: Trigonometry and Exponential Functions
Topics: Trigonometric Functions, Exponential Functions and Applications
Chapters 13, 18 & 19

Specific Outcomes (Objectives/Standards)

Evaluating Exponential Functions
Growth and Decay
Right Triangle Trigonometry
Problem Solving
The Sine and Cosine Rule
Periodic Functions
Modeling using Sine and Cosine Functions

III. Unit Title: Introductory Differential Calculus
Topics: Differential Calculus and Applications
Chapters 21 & 22

Specific Outcomes (Objectives/Standards)

Rate of Change
Derivatives
Limit
Rules of Differentiation
Second Derivatives
Changing Shape
Stationary Points
Rates of Change
Optimization

IV. Unit Title: Unfamiliar Functions
Topic: Higher Degree Equations and Applications
Chapters 23

Specific Outcomes (Objectives/Standards)

Properties of higher degree functions
Asymptotes
Optimization
Where Functions Meet

V. Unit Title: Review of all IB Math Studies Topics
Topics: See the 8 topics above
Chapters: All

Internal Assessment (The “IA”)

An individual piece of work completed during the course involving the collection and/or generation of data, and the analysis and evaluation of that data. Projects may take the form of mathematical modeling, investigations, applications, statistical surveys, etc. You will be given more information about the project as the year progresses. Please Note that

FAILURE TO DO A MATH STUDIES PROJECT WILL RESULT IN A FORFEITURE OF THE IB DIPLOMA OR CERTIFICATE. IN ADDITION, YOU WILL NOT BE ABLE TO PASS THE SECOND SEMESTER OF THIS CLASS IF YOU CHOOSE NOT TO DO THE PROJECT.

Materials Needed:

1. **Required Materials:** All students must have a pencil every day in class.
2. All students are required to have a notebook (spiral or binder plus folder)
3. Graphing paper notebook.
4. Colored Pencils.
5. **Graphing calculator TI-84**

Grading: The grading in this course is consistent with school-wide grading protocol. The primary purpose of grading is to communicate the academic achievement status of students to students, their families, employers, and post-secondary institutions. A grade should accurately reflect **what students know** and are **able to do** in a course. **This course is aligned with the culminating testing experience as generated from the IBO.**

Grading scale

WHS GRADING SCALE		Grade Definitions
A	93.00 - 100%	Exemplary work
A-	90.00 – 92.99%	
B+	87.00 – 89.99%	Proficient/Thorough work
B	83.00 - 86.99%	
B-	80.00 – 82.99%	
C+	77.00 – 79.99%	Acceptable work
C	73.00 – 76.99%	
C-	70.00 – 72.99%	
D+	67.00 – 69.99%	Mediocre work
D	63.00 - 66.99%	
D-	60.00 – 62.99%	
F	0 – 59.99%	Unacceptable work

www.turnitin.com

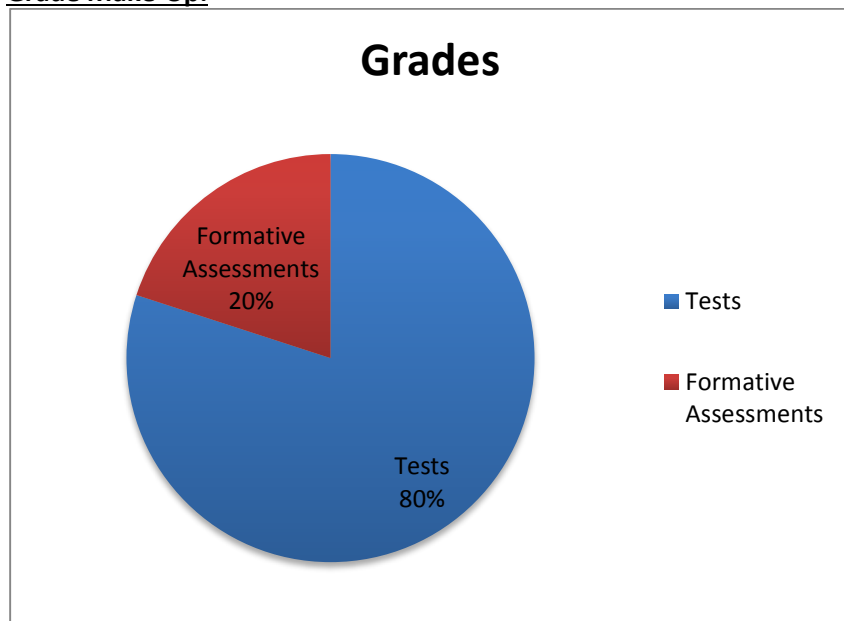
Enrollment:

2nd hour IB Math Studies:

Class ID: 16059275

Password: Studies2018

Grade Make-Up:



Formative: All Formative Assignments will be worth 20 points. Examples of formative assignments are warm-up activities, daily homework, “turn it in” assignments, inquiry journal assignments, learning target quizzes.

Exams: All Unit exams will be based on a 100 point scale. You should refer to our class website to find practice exams. All students should complete these practice exam opportunities prior to the actual exam day. The required IA is counted as a summative exam in the third quarter. Failure to do the IA will result in a F for the third quarter.

Missing & Late Work: Teachers will set all due dates and deadlines. **Due date** is when the assignment is expected to be completed. **Deadline** is when the assignment has to be turned in for **some** credit.

- a. All Summative Tests must be finished during the time provided in the class or immediately after school. There are no re-takes on a unit summative exam. Much preparation must take place before these exams.
- b. Summative Assessments (excluding tests/certain in-class assessments) turned in after the due date and by the deadline **may be lowered** no more than one letter. If a student completes the work after the deadline, a grade of 50% is assigned provided that the basic requirements of the task/assessment are met.
- c. Homework will be assigned as a tool to help students study and prepare for the formative quizzes covering those topics. Nightly homework will not be collected but rather be a framework for student questions they might encounter while working through them. Nightly homework is to prepare the student for the IB level homework quizzes over that content. Those quizzes go into the formative assessment portion of the grade.

Extra Credit: There is no “Extra Credit” offered in this class. There will be opportunities for extra assignments and further deeper investigations. However, there is no extra credit to be offered in lieu of an assessment or assignment.

Re-Learning and Retakes: There will be a list of available times when a student can have the option for retakes.

a) Formative Assessments (the 20% part) can be retaken or re-done for full credit within 2 weeks of the original

There are NO- retakes on

Unit Tests, Quarter or Semester Finals

Grading modifications may be made for students with IEP or 504 plans.

Attendance and Tardy Policies:

You cannot learn if you are not present. I define being on time as being in the classroom when the bell rings. I will not be stopping the class to accommodate you if you arrive late to class but you will be held responsible for the material. In addition, you are a member of the community of our class; there is an expectation that you take that role seriously and are present to contribute.

You are expected to be in class, on time every day.

What to do if you miss a class:

Excused Absence: If you have an excused absence, you will be allowed to make up work, tests, quizzes, and projects with no penalty. Provisions for make-up of schoolwork missed is the student’s responsibility and shall be worked out with the teacher at the earliest time possible, but the time by which the work is completed and turned in should not exceed five (5) consecutive school days after you return to school.

Unexcused Absence: I will not accept makeup work or provide testing for students with unexcused absences.

Academic and Behavioral Expectations:

An atmosphere of mutual respect between students and teachers is expected. Student cooperation and self-discipline are expected. Any student found guilty of academic dishonesty, especially the IA, will be given a zero on the work. The parents will be notified by the teacher. Academic dishonesty includes “giving help” on a test or assignment as well as “receiving help.”

Plagiarism will be viewed as a form of academic dishonesty. All IA’s are turned into turnitin.com. This is a site that has many functions. One of those functions is a similarity check to things that are on the internet and papers that have been turned in over the world.

Due Friday, September 1st

I have read this syllabus and understand the expectations and grading policy for Mr. Gulliford's math class

Student Name (PRINT) _____ Date _____

Students Signature _____

Parent / Guardian Signature _____

I can be reached during the day at these phone numbers:

Home _____

Work _____

Email _____