

Math Studies is a course that integrates Algebra, Geometry, Trigonometry, Statistics, and other areas of mathematics. Students will be preparing for the IB Math Studies exam given in early May. In addition, the coursework should prepare them for college-level math work.

Additionally, students will be required to do a **project** that will be 20% of their final IB grade and count heavily towards their 3rd quarter grade. The Project will be an individual piece of work involving the collection and/or generation of data and the analysis and evaluation of the data. This project will be due in mid-February.

Math Studies is an IB math course designed for students with varied backgrounds and abilities. It has been designed to build confidence and encourage an appreciation of math in students who do not anticipate a large role for mathematics in their future studies. (Those who plan on pursuing math or science should probably be enrolled in IB *Math Methods*).

That does not mean that this is an easy course. In order to be successful, students must consistently put forth a reasonable effort and seek extra help for topics they have difficulty with.

The primary texts for this course will be Mathematical Ideas, by Miller, et al, and Mathematics for the international student, by Coad, et al. The first text is commonly used in college courses. The second is an unofficial IB textbook that should be brought to class daily. The replacement cost of each text is approximately \$85 and \$55, respectively. Additional texts and materials will be used as the need arises. Graphing calculators will be incorporated into most aspects of the course, and it is required that all students have a TI-83 Plus or equivalent graphing calculator.

Major topics to be covered include:

- Sets, Logic, and Probability
- Number Theory and Algebra (including quadratics, series, and exponentials)
- Geometry and Trigonometry
- Functions (including explorations of unfamiliar functions and their graphs)
- Financial Mathematics
- Statistics
- Introductory Differential Calculus

IB revised the curriculum in 2005. Emphasis is being placed on graphical and algebraic explorations of functions that are unfamiliar along with more work on topics such as volume, surface area, and three-dimensional geometry.

The international nature of math as the ‘universal language’ will be stressed, although differences in notation used worldwide will be acknowledged. The similarities and differences of projects presented around the world will be noted.

Class project work will seek to answer questions that include:

- How do we translate verbal ideas into the language of mathematics?
- What is the most appropriate way of communicating a mathematical idea in a given situation?
- How do we use equations/inequalities to model situations and solve problems?
- How do we interpret relations and functions through their graphic, algebraic, and numeric representations?
- What different interpretations can be obtained from a particular pattern of relationship?

Homework will be assigned and checked on a regular basis. Late homework will be treated as follows:

- 1 day late: 50% credit
- 2 days late: 25% credit
- 3 days or more late: 0% credit

Late homework is to either be handed to the teacher at the beginning of a period or placed in the appropriate shelf next to Mr. Cooney's desk in the back of the room. Frequent worksheets, small assignments, and quiz grades will be taken. Chapter tests will count significantly more than worksheets, quizzes, and homework. Participation will also be considered in the final grade. Grades will be based on a point system versus a raw percentage; however, the grade is compiled roughly as follows:

Homework	20 – 24%
Performance/Classwork	36 – 40%
Tests/Quizzes	38 – 42%

NOTE: This is subject to change on a quarter-by-quarter basis. The big understanding is that it is important to complete everything to the best of your ability. Also, the daily warm-up is considered in the participation/performance grade and students may be asked for answers/thoughts spontaneously throughout the year.

Required materials:

- 1 1" – 1½" binder
- 2 pocket folders (with side hole-punching)
- Loose-leaf paper
- Graph paper
- TI-83 Plus (or equivalent) graphing calculator

Optional materials (recommended):

- Ruler

Students are expected to bring all required materials with them each day. One folder is for handout materials that cannot fit in a normal three ring binder. A second folder is intended for storing all information related to the project. Vocabulary sheets will always be available in the classroom. Students will use these to copy and rewrite all vocabulary terms, whether they had previously scribed them or not. Students will take their own notes in the notebook unless otherwise specified by the teacher. Binders should be arranged in the following manner: Vocabulary sheets, notes (both handouts and written in chronological order), pocket folders.

Students are responsible for missed materials due to absences. Old assignments/handouts/worksheets can be found in the basket marked "Old Math Studies Papers." Students who need additional copies can find them here. Students are expected to arrive on time to every class and be prepared and ready. Frequent tardiness will result in the lowering of the student's behavior quiz grade. If a student is in school and is to miss a class due to band lesson, rehearsal, meeting, or for any other legal reason, he student is still accountable for turning in all assignments due at that time and for obtaining all handouts/worksheets/homework assignments for that day or due the following day.

There is a strict policy of no cell phones in the classroom. Any cell phone observed in use will be confiscated by the teacher and returned upon his discretion at a later time. Bathroom usage is also strongly discouraged during class time. Additional rules and regulations of the classroom align with those set by both the school and the district. These standards are, however, subject to change throughout the year.

Collaboration outside of the classroom with fellow classmates is encouraged, albeit not mandatory. I am excited to work with you this year and look forward to this course.

Extra help is available both before and after school