



IB Mathematics SL Syllabus, 2017-18 School Year

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IB Mathematics SL Syllabus

Course Description

Students will be introduced to several new topics and one new area of mathematics. Together we shall explore the new ideas and the mathematical techniques the new material makes possible. Application of this mathematics to matters of practical importance will be emphasized throughout the year. Content and techniques of prior years will constantly be used, consequently students' current understanding and skill will be further enhanced.

Core Goals

- Appreciate the elegance and power of mathematics
- Understand the implications and dependencies of this year's material
- Acquire technical proficiency in each of the topics studied in this course
- Communicate mathematical ideas with clarity, precision, and confidence
- Enhance logical, critical, and creative thinking
- Develop greater patience and persistence when solving problems
- Appreciate the role of abstraction and generalization in mathematics
- Select appropriate technological tools and use them skillfully and carefully

Expectations

Take notes. In mathematics class, every important point is made *both* audibly in spoken words *and* visually in words, symbols, and drawings that go on the board. When you take notes on a solution, derivation, or proof, you think through the mathematics along with your teacher. Taking notes raises your understanding to a higher level, because you interpret, judge, evaluate, and organize what you are seeing and hearing in class while it is happening.

Do homework. Your success in this course depends on your thoughtfully preparing assignments in time for the next class, in which we will discuss your comments and answer your questions about the assignment you completed. Since each class builds upon the previous one, missing

an assignment will leave you unable to follow and understand the material presented in the next class. This cascading effect once begun is hard to stop.

Expect to spend about 4 hours per week outside of class seriously working on mathematics without distractions. If you stick to this, you will find you hardly need to study before an exam, because you will already know the material.

Textbook & Resources

We will be using Mathematics for the International Student: IB Mathematics SL Core (3rd Edition) by Haese.

Required Materials

- An organized 2-in. three-ring binder with five divider tabs
- Paper
- Pencil
- High quality erasers that do not smudge
- Red correcting pencils
- 6-in. plastic see thru ruler
- TI-84 Plus graphing calculator

Course Topics (taught over two years)

- Topic 1-Algebra
- Topic 2-Functions and equations
- Topic 3-Circular functions and trigonometry
- Topic 4-Vectors
- Topic 5-Statistics and probability
- Topic 6-Calculus

Grading & Evaluation

Your semester mastery grade is determined by full period exams, brief quizzes, and any graded assignments. Your scores on quizzes will be no more than 20% of your semester grade. Exams and graded assignments will make up no less than 80%. Exams and quizzes will have strict time limits, because they seek to assess your level of proficiency with the material that we recently covered. Proficiency often means that you can work a problem in a couple of minutes using the recent material we covered, rather than suffering 15 minutes of furious labor because you were unfamiliar with the recent material we covered.

A quiz may be given at any time without prior announcement. Expect a short quiz about once per week. Exams will be announced well in advance and will require a full class period to complete. In keeping with departmental policy, exams will be returned to the teacher after students have had time in class to go over them in class. Exams will be kept in student portfolios and available to students in the classroom or during Math Elective.

Your IB grade:

Computed soon after your senior year, your IB grade comprises two exams called Paper 1 (40%) and Paper 2 (40%), and your IA grade (20%). Papers 1 and 2 are graded by an IB examiner; your MCDS teacher will not see them. The IA is graded by your teacher and then submitted to IB for review and moderation.

Homework

It's a fact: homework is the single most important ingredient in determining your grade on examinations and quizzes, and therefore your course grade. If you slack off on homework, you will get a poor course grade.

Retake Policy

Students may retake one exam per semester. The grade on the retake will replace the original grade, whether or not the new grade is higher or lower than the original grade. All retakes will be given on a day very close to the end of the semester.

Absence Policy

If you are absent for a quiz or an exam, *you* are expected to arrange to make it up in a timely fashion. If you miss a class meeting, borrow another student's notes to copy. Discussing those notes with the other student will further benefit both you and your classmate.

Netclassroom

Assignments will be posted on Netclassroom each class day. Your scores on quizzes and exams will be posted after you have received and reviewed your graded work in class.

Website

Assignments will also be posted on my website www.math.mnrt.net at the end of each class day. In addition, every handout, problem set, and document provided in class will be found here linked to the relevant assignment. The site is mobile device friendly and require no log in. You are *not* required to check my website. You *are* required to check NetClassroom.

Late Work Policy

Homework is considered practice, so you will not be graded on it. When a graded assignment, for example a take-home exam, is given, the MCDS High School late work policy will apply to it. This policy states that for each day work is late, 10% will be deducted from the grade, up to 50%. If the work is never turned in, it will count as zero.

Cell Phones

Cell phones ***cannot*** be used as a calculator.

Getting Help

Please seek my help outside of class. I teach because I love to do mathematics with you. The student who makes the extra effort to get help when needed makes a very good impression on the teacher. Do not expect the impossible, though. If you have not kept up with assignments, meeting with me for an hour as the exam date approaches is not going to do you much good. If that was all it would take for you to do well, I would not be giving all these assignments in the first place. Remember that asking specific questions rather than saying, "I don't get it" will bring you the most useful help as well as evidence the effort you made in trying to master the material.