IB Mathematics Higher Level Mr. Jason Howes

2012-2013 Room 205

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**Contact Information:** If you have any concerns or questions during the school year, please do not hesitate to get in touch with me. E-mail is the best way to contact me.

**Course:** The International Baccalaureate (IB): Mathematics Higher Level

**Course Overview:**

IB Mathematics at the Higher Level is a demanding course, requiring students to study a broad range of mathematical topics through a number of different approaches and to varying degrees of depth. The course caters for students with a good background in mathematics who are competent in a range of analytical and technical skills. The majority of these students will be expecting to include mathematics as a major component of their university studies, either as a subject in its own right or within courses such as physics, engineering and technology. Others may take this subject because they have a strong interest in mathematics and enjoy meeting its challenges and engaging with its problems.

The internally assessed component, the exploration, offers students the opportunity for developing independence in their mathematical learning. Students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas. The exploration also allows students to work without the time constraints of a written examination and to develop the skills they need for communicating mathematical ideas.

**Course Content:**

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

OPTIONAL TOPIC: 1 will be chosen by the instructor.

Topic 7 – Statistics and probability

Topic 8– Sets, relations and groups

Topic 9 – Calculus

Topic 10– discrete mathematics

**Note**: Topics 1-4 are covered in grade 11 and topics 5-6 in grade 12 along with the optional topic and IA.

Textbook: *Mathematics Higher Level Course Companion, Oxford University Press 2012*

**Supplies:**  Students are required to bring the following to each lesson: school issued IPAD pen/pencil, textbook, mathematics notebook, graphic calculator. Each student should possess her/his own TI-83 or TI-84 calculator .  ***TI-83 Plus and/or TI-84 Plus are the only calculators that will be used in the teacher’s presentation.*** There are a number of other calculators allowed on the IB Exam. If you already have a calculator and want to know if it is allowed, please see me.

**Expectations:**

* Be on time with required supplies
* Cell phones/listening devices MUST be switched off!
* No food, gum, hats, or listening devices during class
* you are responsible for catching up on any work missed through absence
* late work may result in an academic detention (please see student hand book for details)

**Cheating is unacceptable under all circumstances**. If you are involved with any cheating or copying of one's work and representing it as your own or giving your work to another you will receive a **zero** for that piece of work and the high school principal will be notified.

**Instructional Methods:** Class sessions include whole-class instruction, small group work, individual work, and projects. Since this is a higher level IB course, we will meet every period for the entire block. I make myself available for extra help before/after school or during lunch by appointment.

**Assessment / Grading:**

ISS reports assessment in three categories:

1. Achievement/ Attainment

Every student is capable of success in this course through hard work and dedication. It is very important to be an active participant in class; this includes asking questions and taking part in class discussions.

Interim Summative Assessments (ISA) 40%

* ISAs may include homework, notebook tests,

short/pop quizzes, investigations, and other

small assignments

Significant Summative Assessments (SSA) 60%

* SSAs will generally consist of longer quizzes, tests

or projects over the course of a chapter or unit

1. Effort, Engagement, Organization and Progress (see student hand book)
2. Learner Profile & Conduct (see student hand book)

Semester grades

 Assessments throughout the semester 80 %

 Winter Exam/Summer Exam 20 %

**Homework:** Homework will be set most lessons; and on the occasions when it is not, students are advised to consolidate their learning with 40 minutes of self study. For excused absences please refer to the guidelines in the student handbook for turning in missed work.

**Notebook Check:** You will need to keep an organized mathematics notebook with all notes, homework, and sample problems. This may be graded at the end of each unit.

**Tests and Quizzes:**  Students may not always be forewarned of quizzes and, thus, should always be prepared for this possibility! Tests will follow the completion of each unit within the course. Adequate warning will be given for all tests. HW/tests/quizzes will also be posted on the web calendar.