Mrs. Gordy's

IB Mathematics: Analysis & Approaches SL

Year Two (20-21)

Syllabus

Contact Information

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From IBO

Course Description

This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course as well as topics that are amenable to investigation, conjecture and proof. This course is for students who enjoy developing their mathematics to become fluent in the construction of mathematical arguments and develop strong skills in mathematical thinking. They will be also be fascinated by exploring real and abstract applications of these ideas, with and without technology.

Links to...

International Baccalaureate Organization website

Mathematics: Analysis and approaches SL guide

Mathematics: Analysis and approaches formula sheet (from Revision Village)

Aims

1) develop a curiosity and enjoyment of mathematics, and appreciate its elegance and power
2) develop an understanding of the concepts, principles and nature of mathematics.
3) communicate mathematics clearly, concisely and confidently in a variety of contexts.
4) develop logical and creative thinking, and patience and persistence in problem solving to instil confidence in using mathematics.
5) employ and refine their powers of abstraction and generalization.
6) take action to apply and transfer skills to alternative situations, to other areas of knowledge and to future developments in their local and global communities.
7) appreciate how developments in technology and mathematics influence each other.
8) appreciate the moral, social and ethical questions arising from the work of mathematicians and the applications of mathematics.
9) appreciate the universality of mathematics and its multicultural, international and historical perspectives.
10) appreciate the contribution of mathematics to other disciplines, and as a particular "area of knowledge" in the TOK course.
11) develop the ability to reflect critically upon their work and the work of others.
12) independently and collaboratively extend their understanding of mathematics.

The IB Examination

The examination takes place at the end of Year Two. Students take two papers and submit a math exploration. Everything in this course is in preparation for all of these assessments.

External Assessment

Paper 1 – 40%
80 marks | 90 minutes
No calculator
Paper 2 – 40%
80 marks | 90 minutes
Calculator
Short Response & Extended Response

Internal Assessment

The Exploration – 20%
Each student will choose a topic of interest and write a 12-20 page report. The exploration will be graded by the teacher using an IB DP rubric with focus on mathematical communication, presentation, personal engagement, reflection and use of mathematics.

Grading Guidelines

Categories

Formative – 50%
- Daily Work – 25%
- Skills Checks & Quizzes – 25%

Summative – 30%
- Midterm – 5%
- IA Checkpoints – 5%
- Test Papers – 20%

Final Exam – 20%

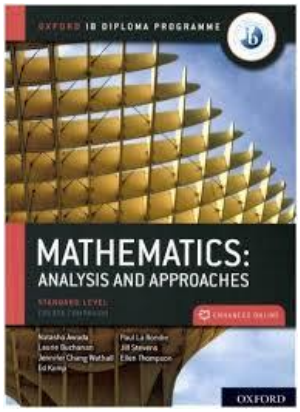
A: 90 – 100
B: 80 – 89
C: 71 – 79
D: 70
F: 0 - 69

Enhancement Points

This is an IB course and will receive 5 points added onto the final calculated average at the end of both years. For the HOPE scholarship and admission into certain colleges, the enhancement points may not be included in the GPA calculation.

Into the Course

The Textbook



Mathematics: Analysis and Approaches Standard Level. Awada, Buchanan, Chang Wathall, et al. Oxford University Press, 2019.

Supplemental Resources

Kognity Online Textbook
Kami Document Annotation
Nearpod
Illuminate Education

Supplies Needed

3-Ring Binder (optional)
College Ruled Notebook Paper or Spiral Notebook
Blue Ballpoint Pens
Pencils
Graphing Calculator *(TI-84 family preferred)*

Course Outline for Year One	
Topic	Teaching Hours
Geometry & Trig	25
Calculus (Part 2)	14
Mathematics Exploration	10
Review for the Exam	

Formative Assessments

Homework: Students will be given homework packets every two weeks that covers part of a unit from first semester and concepts that students are learning during those two weeks. Each lesson will have optional suggested practice problems from the textbook that will be counted for extra credit if turned in with the homework packets; all work must be shown on these problems for the credit to be counted.

Skills Checks: Skills Checks are five-question formative assessments on a maximum of 2 sections in the textbook on skills learned by topic. They are timed and require mastery of the math skills underlying some of the more difficult questions. The grades are from 50% to 100%, and sometimes they are bonus questions for extra credit; each question is a graded right or wrong (usually no partial credit). Sometimes students will be allowed to use a calculator and sometimes they will not.

Quizzes: Quizzes are usually given after an entire chapter in the textbook. These summative assessments will have some short answer questions and exam-style questions. The exam-style questions will be graded with a markscheme (like the IB examination). Sometimes students will be allowed to use a calculator and sometimes they will not.

Summative Assessments

Midterm: Students will be taking a midterm in December on all of the content covered in the first 18 weeks of school. There will be 1-2 days of review before this exam.

Test Papers: After we cover a few chapters, the students will have a Test Paper 1 (no calculator) and a Test Paper 2 (calculator). The tests will cover two sittings during Year Two and will be cumulative for both years. During Year Two, grades will be based on the scaled grade scoring below.

Final Exam

During Year Two, students will take two mock exams and the best score out of the two will be the grade for the final exam based on the scaled grade scoring below.

Scaled Grade Scoring

7 – 105%
6 – 100%
5 – 95%
4 – 89%
3 – 79%
2 – 70%
1 – 63%

When You are Absent...

1. Check Google Classroom | 2. Check the website. | 3. Contact your classmate(s).

Arrange a day to make up a quiz or test if necessary (within 3 days).

# of days out for an excused absent = # of days to make-up homework & classwork assignments

Teaching Models

Current Model

We will take notes together on a particular topic, students are encouraged to follow along with me taking notes having a spiral notebook in front of them or a printed copy of the notes (that the student must print ahead of time). After we take the notes in class there will be a homework assignment that students will have to work on from the textbook or a worksheet on their own. They may get assistance during tutoring.

Flipped Classroom Model

Students will be asked to watch a video of the lesson being taught by myself or from YouTube, *or* students will be asked to read a subsection from the online textbook (Kognity) for homework on a night before. Then the next class we will work on practice problems together or a review game. It is very important that students come prepared knowing the lesson concepts before class since we will not spend any time going over the lesson.

Policies

Late Work Policy

All graded classwork and homework assignments turned in late will receive and automatic 50% deduction. All projects will be given a grade reduction of 10% per day with a maximum reduction of 60%.

Extra Credit Policy

There are several opportunities for extra credit throughout the year. Sometimes there are bonus questions on assessments for extra credit. These will always be optional and available to all students.

Tutoring

During digital learning:
9a – 10a daily
2:30p – 3:25p daily
During hybrid instruction:
4:30p – 5:30p tues & wed

All Through Google Meet

Discipline Policy

1st strike: Warning
2nd strike: Conference
3rd strike: Parental Contact
4th strike: Referral

Requiz/Retest Policy

There will no chances to redo a quiz or skills check. There will be opportunities for retests in the middle of the year or at the end of the year. More information to follow.

Academic Honesty

Please refer to the DCHS Academic Honesty policy as well as the IB Performance and Continuation Policy. Students are expected to be honest in class regarding their work and preparation for class. All student products are expected to be originals; plagiarism will result in a zero for the assignment and a referral to our IB coordinator, Dr. Fossum.