



# QSI Mathematics

## *Advanced Math 1 Syllabus*

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### Introduction

Hello, my name is Emily Hinman. I will be the teacher for Algebra through QVS this school year. I look forward to working with your children. I am a licensed school psychologist as well as a certified mathematics and special education teacher. This will be my 13th year working in international schools. I spent four years working at QSI Tbilisi, five years at The American International School of Vilnius, two years at QSI Skopje, and this is my fifth year working for QVS.

I would like to provide you with some basic information in this syllabus as well as let you know that you can always follow along with the course on my Moodle page. Also, I will always let you know what the essential outcomes are (i.e. what your child is learning at school), what the assignments are, due dates for assignments, as well as test dates on a shared Google doc. If your child struggles to complete an assignment or needs additional help, I will send a quick email letting you know.

If you ever have any questions or concerns about the class, please contact me at [emily-hinman@qsi.org](mailto:emily-hinman@qsi.org).

## Course Overview

Advanced Mathematics I is a secondary course designed for students who have mastered Algebra I, or its equivalent. It includes a review of linear functions and linear systems as well as the study of quadratic, exponential, rational and trigonometric functions and their inverses, with an emphasis on graph analysis, modeling and problem solving. Students are expected to engage in hands on activities in every essential unit and every student is expected to have access to a graphing calculator.

The course is divided into eight essential units, and two selective units. Each unit is intended to be taught during five 45-minute periods per week. Several selective units are identified of which every student is expected to complete at least one. This means that every student is expected to demonstrate mastery of 10 units. Mastery of the Advanced Mathematics I course is a prerequisite for enrollment in Advanced Mathematics II and IB Mathematics SL and HL.

Each essential unit is divided into Essential Outcomes (TSWs) that will be assessed for mastery and will be reflected on the student's status report. In addition to the Essential Outcomes, some units include Introduced and Practiced Outcomes which may be taught but do not need to be assessed. The Essential Outcomes will always be posted on my website. I will always make sure that parents are aware of which unit and outcomes we are working on in class through my website. Students will also work on two selective units throughout the year. All units are described at the end of the syllabus.

## Resources/Materials

- *enVision Mathematics- Algebra 2*. Pearson, 2020
- Students need to have access to a **TI-83/84 Calculator** – Some QSI schools have calculators that students can borrow for the year and other schools request that students purchase their own.  
(<http://www.education.ti.com/en/us/products/calculators/graphing-calculators/ti-84-plus-silver-edition/features/features-summary>)
- Access to IXL - <https://www.ixl.com/math/algebra-2>

## Assessment

Students will be provided with a rubric at the beginning of each unit to help determine if a student has reached 'A' level mastery or 'B' level mastery. **Mastery means** that the student has learned the facts and/or concepts to such an extent that they are usable tools in future endeavors. The grade of 'A' not only indicates that the student has mastered the material well, but is able to consistently demonstrate higher order thinking and performance skills such as problem solving, analysis, creativity, *etc.* In more practical terms, students will be given specific assignments with each unit that will be labeled "A" assignments. Students will also have specific questions on tests that are labeled "A" questions. Students will receive a "P" if they are currently working on a unit and/or need more time and practice to attain mastery.

I will use two different types of assessments, formative and summative. Formative assessments are labeled as quizzes. Students can take quizzes alone. They will either be online or paper and pencil tasks that the students send back to me. These assessments simply tell me what the students need more practice on. There is NO concept of averaging quiz and lesson grades into a final unit grade. The final unit grade will be assessed using an end of the unit summative assessment. These assessments will need to be taken with the teacher mentor at the school. Real life projects will also be used to help determine mastery of a TSW. Sometimes students do not understand a concept on a test, but demonstrate mastery by using the skill in another context. Other times, students will need to take a reassessment on an unmastered skill.

One of my goals for students is that they work on concepts that they are “Ready to Learn.” At the beginning of the year, students will take a Pre-Assessment. If students show mastery on some of the content, as is expected, they will have some additional time to work on A level assignments when we cover those topics in class.

I will email parents graded unit assessments for you to see and discuss. Once you have seen the assessment, please let me know if you have any questions. Since I will have uploaded student assessments (images) students can keep the original assessment in a portfolio at their school.

## Teacher Expectations for Students

- (1) Have the goal that you want to learn the course material. This is quite different from having the goal that you want to earn A's or B's. If we share the goal that you can use the content of this course in future mathematics courses, then we will always be working on the same page.
- (2) Be respectful of all students in the class. When posting on Moodle keep in mind that students only know you by what you write and it is easy to misunderstand each other when we do not have body language to help guide intentions.
- (3) Take responsibility for your learning. It is my job to give you all the tools and content to be successful. It is your job to use the tools and want to be successful. We have to trust each other a lot in an online learning environment. I put the faith in you to follow the directions that I give in the lessons and assignments rather than trying to find a shortcut around the assignment.
- (4) Students should have to finish lessons including practice problems in order to unlock the next lesson. At the end of each lesson, I give students a chance to ask questions. Students need to ask questions when they do not understand something.
- (5) Complete practice problems from the lessons neatly in a notebook. Show what you can do without the provided answers in one color and show corrections in another color. This way you will be able to see what you need to practice more later. I will ask students to upload a weekly video journal showing me their work in their notebooks.
- (6) Complete quizzes from memory or if you feel like you need to check something in your textbook then leave me a note/comment saying that you looked up something because you forgot. Quizzes are not graded so you do not need to worry about making mistakes. I will provide students with additional explanations and practice for non-mastered skills.

- (7) Complete Unit Tests to a mastery level. Students need to be able to demonstrate mastery on all the essential outcomes of a unit at the same time.
- (8) Complete any “Real Life” assignments that are given to the standard set forth by the rubric.
- (9) Complete the weekly assignments by the end of each week. QSI does not believe that time should be a limitation on student learning when learning takes additional time. This is different than taking additional time because you have other “things” that you want to do. If you are struggling with a concept and it is taking you more time, tell me right away.
- (10) Let me know if you have a break that is different from QVS so I understand why you are not completing online assignments.

## Homework

There is nothing that is specifically called homework in this class. There are practice problems built into the SCORM package. If you complete the SCORM lesson as it is assigned then you do not have any work to take home. This is my absolute goal - use time at school efficiently so that nothing goes home. If you find that you are working very slowly on the lesson and you need more than 20 - 30 minutes at home to complete the lessons most of the time, please let me know right away and we'll investigate why it is taking you more time than I intend.

## Essential Units:

E01 – Linear Functions and Systems  
E02 – Quadratic Functions and Equations  
E03 – Polynomials and Polynomial Functions  
E04 – Rational Functions  
E05 – Radical Exponents and Radical Functions  
E06 – Exponential and Logarithmic Functions  
E07 – Trigonometric Functions  
E08 – Trigonometric Equations

## Selective Units:

S07 – Probability  
S09 – Portfolio/Project