SCHOLÉ ACADEMY
CLASSICAL ACADEMIC PRESS

Algebra II and Trigonometry

Yearlong 2020/2021

ELIGIBLE STUDENTS:

Grades (10-11, 12th graders welcome): Students who have successfully completed Algebra I and Geometry, students who are able to remain focused and diligent, reviewing information and concepts on their own throughout the year.

Class Dates: Course begins September 8, 2020 and concludes May 28, 2021.
Class Times: MWF / 12:30pm - 1:45pm (EST)
Instructor: Lauren O'Bryan
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SCHEDULE FOR *ALGEBRA 2 AND TRIGONOMETRY:*

CLASS SESSIONS DATES:

Classes will take place on Monday, Wednesdays & Fridays: 12:30am - 1:45pm (EST) for 32 weeks and 96 classes on the following dates* --

September (10): 9, 11, 14, 16, 18, 21, 23, 25, 28, 30
October (13): 2, 5, 7, 9, 12, 14, 16, 19, 21, 23, 26, 28, 30
November (10): 2, 4, 6, 9, 11, 13, 16, 18, 20, **[Thanksgiving Break]**, 30
December (8): 2, 4, 7, 9, 11, 14, 16, 18, **[Christmas Break]**
January (9): **[Christmas Break]**, 11, 13, 15, 18, 20, 22 **[End 1st Semester]**, 25, 27, 29
February (9): 1, 3, 5, 8, 10, 12, 15, 17, 19, **[Winter Break]**
March (11): 1, 3, 5, 8, 10, 12, 15, 17, 22, 24, 26, **[Holy Week]**
April (12): **[Holy Week]**, 5, 7, 9, 12, 14, 16, 19, 21, 23, 26, 28, 30
May (11): 3, 5, 10, 12, 14, 17, 19, 21, 24, 26, 28 **[End 2nd Semester]**

**Please note the above dates and times are the anticipated class sessions for this course. However, all dates are subject to change as the instructor's circumstances might dictate (e.g. illness, family emergency). Any classes canceled by the instructor will be made up at an alternate time designated by the instructor.*

Algebra 2 and Trigonometry Course Map:

Unit 1: Linear Equations and Relations, Inequalities, Systems of Equations, Matrices

Unit 2: Quadratic Functions and Radical Functions and Inequalities, Polynomial Functions

Unit 3: Rational Expressions and Equations, Exponential and Logarithmic Relations, Conic Sections

Unit 4: Trigonometric Functions, Graphs, and Identities

Unit 5: Sequences and Series, Probability and Statistics

Office Hours: In addition to scheduled class times, teachers will generally designate an optional weekly session as needed. During "Office Hours" students may raise questions, seek assistance, or review class material.

Required Course Text and Materials:

- Glencoe Algebra 2 (2008 edition)
- Wacom Intuos Tablet, or a similar product, for working on problems during class
- Pencils and erasers for assignments
- A 3-ring binder for organizing notes, assignments, etc.
- Paper (printer or college ruled paper, and graph paper) for notes and assignments
- Graphing calculator encouraged

Algebra 2 and Trigonometry Course Description:

Mathematics, the universal language of the sciences, is a worthy focus of study on its own. Through the study of mathematics, the student begins to more deeply understand the order of creation that speaks the praise of our Creator and exemplifies His divine love and majesty. During this course, we will seek to build upon the foundation laid in students' studies of Algebra I and Geometry, continuing to explore linear, quadratic, polynomial, rational and radical functions, while introducing trigonometric, exponential, and logarithmic functions. Conic sections, probability, statistics, and matrices will also be examined, and some discussion of the history of algebra and mathematics in general will be included tangentially as well.

While we will seek to keep this course restful, mastery of Algebra 2 and Trigonometry does take some time and practice. Those who not only actively participate in class discussion and exercises but also take time to review notes after class and work on practice problems will find the most success.

This course also seeks to simultaneously integrate facts, logic, expression, and applications with each topic covered. During class discussions, the Socratic Method will be employed and students will be encouraged to explain what they have learned back to the instructor and to the other students.

Student Expectations: Executive Function Skills

Students enrolling in Scholé Academy's Algebra 2 and Trigonometry course will be expected to show development of Executive Function Skills throughout the year. Executive Function Skills are a set of qualities and skill sets students can hone to better approach the courses, lectures, readings and teachers they will face in their future academic coursework.

Each teacher will invariably have her own set of requirements and skills she requires students to bring to their studies. *Generally* speaking, there are five such qualities that are necessary for students in various subjects:

1. An Engaged Student: One who is focused and willing to step into the arena of class discussion, ask questions, supply answers, and take in what is being discussed and apply it to himself. Importantly, students should keep what they have learned in mind and bring in observations when they come to class.

2. Note Taking: A student who is an engaged participant in the class is able to note important and relevant content in an organized fashion. His notes would then be consulted, independently, for application in assignments and assessments.

3. Attention to Detail & Preparedness: These are students who consistently adhere to deadlines and submission requirements, confirm technology is working prior to the start of class, take it upon themselves to reach out and determine how to proceed after an absence, are responsible for consulting his course information and adjusting as the class proceeds, etc.

4. Employ Critiques: These are the students who receive feedback to one of their submissions, and then are self-motivated to apply that feedback to future assignments and learn from mistakes. These students also glean information from the live class critiques of fellow students and note mistakes to avoid by learning from others. The student displays courage, humility and perseverance in learning and realizes that mistakes are often an inseparable part of the learning process.

5. Initiative/Maturity: This student would hear the teacher's comments, be able to assess whether or not the teacher was describing his work, and then take the initiative to schedule office hours with his teacher if necessary.

Student Expectations In Action

In this class, students will be expected to listen attentively, participate actively in class discussions and exercises, and be respectful of others during discussion. Students are expected to arrive to class on time, with all assigned material completed ahead of time and an appropriate time spent studying. The instructor will facilitate learning for the student, but the responsibility for staying up-to-date with classwork and assignments.

All assignments will be due into the appropriate Schoology assignment folder prior to the start of class each day. Students turning in late work will earn a 10% penalty for each day the assignment is late. Students will submit their work by scanning their homework pages and uploading it into the Schoology assignment window. Photographs of completed assignments will not be accepted as they are incredibly difficult to read.

Please Note: Course work is designed such that students should be able to complete work independently; however, students are encouraged to discuss what they have learned with their family to build confidence, receive encouragement, and perhaps even teach concepts to their parents! I ask that students show steps used to solve problems, as this will help me provide the most helpful feedback.

Student Evaluation: Grading

While exploring *Algebra 2 and Trigonometry* through Scholé Academy will be "restful" (and hopefully a discovery of a most eloquent "language!"), we also recognize the need to provide grades for students who will be using this course as part of their prepared transcript for college application. It is a delicate balance to achieve both restful learning and excellent academic performance. Earning a specific grade should not overshadow achievement goals for mastery of this discipline. In their studies of *Algebra 2 and Trigonometry,* students not only grapple with more abstract and complex concepts that provide an ever clearer picture of creation, but also build upon a foundation for greater understanding of the mathematical language behind many technical and scientific disciplines. In that sense then, mastery of more complex functions is a reward in and of itself. I can assign the following grades to the student's level of achievement: *magna cum laude* (with great praise); *cum laude* (with praise); *satis* (sufficient, satisfactory) and *non satis* (not sufficient).

Ideally, every average student working diligently should do praiseworthy work (cum laude). Those who excel beyond this expectation will be the *magna cum laude* students. Students who do adequate but not praiseworthy work will be designated *satis*. *Non satis* means lacking sufficiency or adequacy.

Inasmuch as you might be fully on board with this grading method in theory, there will undoubtedly be the need to complete a transcript with either a numeric or traditional letter grade. Traditional percentage grades will be provided and will be readily accessed on the *Algebra 2 and Trigonometry* Schoology page. Additionally, Mrs. O'Bryan will provide a transcript of that grade to the requesting parent at the end of the year.

Student Evaluation: Mastery Portrait

Mastery portrait: Students entering Algebra II are honing the skills gained in their studies of Algebra I and Geometry. Students who are prepared to take this class are typically adolescents approaching young-adulthood, and perhaps even considering studying mathematics or science at the undergraduate level. As such, this course seeks to provide the academic tools necessary to achieve mastery and skills associated with analytical thought, as well as assist students in the development of their moral virtues. These three aspects of the course would comprise the "learning target".

- At the completion of this course, students will understand the characteristics and behavior of algebraic and trigonometric functions, as well as understand the basics of analytic geometry. Students will have a working knowledge of statistics and probability and how they are applied in the real world.
- Students will have grown in their skills of being able to "read" and interpret an equation, then be able to identify necessary steps in solving a problem.
- Students will grow in wonder, humility, patience, and perseverance as together with their classmates wrestle with the concepts presented.

Student Evaluation: Assignments, Types & Weights

Mrs. O'Bryan will communicate with students regarding assignment feedback and grading through the free online grading system, Schoology. She will provide students with more detailed information and access to the Algebra 2 and Trigonometry course page.

Students' grades will be comprised of:

1. Assessments: 40% of the grade
2. Homework: 25% of the grade
3. In-class work: 20% of the grade
4. Projects: 15% of the grade

Student Evaluation: Academic Dishonesty

Students will often take assessment tests and/or quizzes privately at home. Students are on their honor to abide by Scholé Academy's Learning Philosophy which assumes the personal cultivation of Student Virtues described in the Student-Parent Handbook.

Additionally, plagiarism is a serious and punishable offense. **In the online age we live in, programs and websites exist that provide students answers to their homework problems. Students may not use such resources or found answer keys to copy solutions to problems.** A plagiarized assignment will result in a failing grade.

The Virtual Classroom:

We will be using the free online "virtual classroom" software provided by Zoom, one of the leading companies that provides such software. The virtual classroom will provide students with interactive audio, text chat and an interactive whiteboard in which texts, diagrams, video and other media can be displayed and analyzed. We will provide students with a link (via email) that will enable students to join the virtual classroom.

Specific information regarding the technology used by Scholé Academy (including required technology) can be found by visiting the Technology in the Classroom section of the Student Parent Handbook.

Students will submit documents by scanning and uploading them to their personal computer, then attaching those files as .pdfs to an email. They will submit their work to the *Algebra II and Trigonometry* Schoology assignment page (access granted after enrollment is secured).

About the Instructor:

Lauren O'Bryan was born and raised in central Oklahoma, relishing all that creation has to offer through camping, fossil hunting, weather watching and attending Oklahoma City Astronomy Club events. She received a B.S. in Meteorology at the University of Oklahoma in 2014. Motivated by a desire to put her knowledge to use for service, she provided forecasts and voyage plans for mariners as part of a large global company. However, she missed the classroom and the joy that comes from getting to know new corpores of knowledge. After marrying an "armchair classicist", she cultivated a burgeoning interest in classical education, which only continued to grow after she was blessed with a son in 2019. This interest led her to become involved in the Servi Institute, and ultimately led her to the Scholé Academy.