

Challenger High School
2021-2022
Advanced Algebra Syllabi
CEDARS Code 2056 9/7/21
MTH 253/254

Instructor: Dennis Moon

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Grade Level: 9, 10,11,12

Credit: Mathematics, Math Elective, or Elective

NCAA Approved

Time Requirements:

Students will be required to do approximately 4-5 hours per week of class work and to do approximately 5 hours per week of homework. Students are required to contact the instructor in regard to any absence in order to determine how the student will make up any missed assignments.

Course Description:

This course emphasizes the concepts of Advanced Algebra at the high school level. Topics include: problem solving; patterns and recursion; describing data; linear models and systems; functions, relations, and transformations; exponential, power, and logarithmic functions; matrices and linear systems; quadratic and other polynomial functions; parametric equations and trigonometry; conic sections and rational functions; trigonometric functions; series; probability; and applications of statistics. In addition to these topics, students will interpret and make decisions based on numerical information and find ways to solve problems that arise in real life while working independently and in groups. Over the course of the year the student will earn a 1.0 credit (or a 0.5 credit over the course of a semester, or a 0.25 credit over the course of a quarter).

- **Course content:** student will demonstrate a basic understanding of the following:

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Quarter 1:

1. Function Transformations
2. Quadratic Functions

Quarter 2:

3. More Quadratic Functions
4. Trigonometric Functions

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Quarter 3:

5. Rational Exponents and Radical Functions
6. Exponential and Logarithmic Functions

Quarter 4:

7. Sequences and Series
8. Polynomial Functions

This course meets Common Core State Standards – Mathematics as defined by the state and the school district. This course meets the State and School District graduation requirements.

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Common Core State Standards

- Refer to: *Common Core State Standards for Mathematics* (which can be found on line at http://www.k12.wa.us/CoreStandards/Mathematics/pubdocs/CCSSI_MathStandards.pdf) for more detail and to identify specific standards.

CCSS – M Clusters covered in this course:

- N-RN 1-3: The Real Number System
- N-Q 1-3: Quantities.
- N-CN 1-2, 7-9: The Complex Number System
- A-SSE 1-4: Seeing Structure in Expressions
- A-APR 1-6: Arithmetic with Polynomials and Rational Expressions
- A-CED 1-4: Creating Equations
- A-REI 2, 4, 11: Reasoning with Equations and Inequalities
- F-IF 4-6, 7-9: Interpreting Functions
- F-BF 1, 3-5: Building Functions
- F-LE 4,5: Linear, Quadratic, and Exponential Models
- F-TF 1-2, 5, 8: Trigonometric Functions
- G-GPE 3: Expressing Geometric Properties with Equations
- S-ID 4-6: Interpreting Categorical and Quantitative Data
- S-IC 1-6: Making Inferences and Justifying Conclusions
- S-CP 8,9: Conditional Probability and the Rules of Probability
- S-MD 6,7: Using Probability to Make Decisions
- Math Practices 1 – 8

Materials (may include but are not limited to)

- District approved textbook: Big Ideas Math: Algebra 2
- Quarter 2 and Quarter 3 will be piloting material from LearnZillion – Illustrative Math and Agile Minds Texts
- Internet Sites, Lab experiences, Computer based learning models, Reading materials, Videos
- All materials will be provided by the instructor

Assessment (may include but not limited to)

- Oral/Written expression for mastery understanding of course concepts and demonstration of the application of course concepts.
- Performance based evaluations through labs and projects.
- Progress reports will be done monthly by the instructor.

Progress

- Student progress is monitored weekly. Student monthly progress is at the discretion of the certificated teacher based on weekly evaluations and the students' ability to complete the required learning benchmarks for that month.
- If a student fails to make collective progress for all weeks, then monthly progress is unsatisfactory. Student monthly progress is specifically evaluated against progress benchmarks, which are clearly defined in the course for each month.
- In addition to the course schedule, these benchmarks may also come in the form of lesson, unit, assignment and/or assessment completion dates.
- These established progress benchmarks will allow teachers and students to assess the students' educational progress in meeting the course learning standards.

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Grading Scale: (Progress reports will be done monthly)

- **A** (90-100%) Student demonstrates exemplary abilities through scores earned; student showed outstanding mastery of expected skills.
- **B** (80-89%) Student demonstrates adequate abilities through scores learned on assessments; student shows adequate mastery of expected skills.
- **C/P** (70-79%) Student demonstrates average abilities through scores earned; students showed average mastery of expected skills.
- **NC** (69% or below) Student unable to demonstrate mastery of expected skills.

This grade will come from demonstrating mastery of the standards being measured through formative and summative assessments. The formative assessments will contribute 40% of the grade and the summative assessments will contribute 60% of the grade for the course.

Relationships to other Content Areas

- Completion of this course will require the student to integrate: scientific, logical linguistic, social, historical, societal, technological, and writing skills.

Class Expectations:

Each student is responsible for their own behavior and act in a manner that will not detract from the learning environment for other students. Refer to the District Students Rights and Responsibilities handbook for further detail on behavioral expectations. Failure to abide by these expectations may result in a warning, removal from the class for a specified time period, parent phone call and/or conference, or additional discipline as spelled out in the Students Rights and Responsibilities.

Student assignments may be found on their Canvas course and they may download and access missing assignments at any time. These assignments are updated daily and include directions and often examples. Their grades are also kept up to date in family access (at least weekly if not more often). If there are any questions as to a grade or an assignment I can be contacted at 253-800-6812 or at dmoon@bethelsd.org.

Attendance is crucial in this class. Please be in class, **on time**, regularly. Many experiences we do cannot be re-created on an individual basis. We have learned that students who miss even a few days of school each month are at a greater risk of academic failure and dropout. We have set a goal that every student in our school attends school regularly (no more than nine absences per year, approximately one absence per month, and that includes excused absences). It is the student's responsibility to get assignments and activities that have been missed due to absence.

Student Signature

Parent Signature

Parent preferred contact
If phone call – include number
If text message – include number
If e-mail – provide address