

# Algebra II

## Syllabus 2017-2018

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Period 2 and 7

### Check your grades:

The Algebra II course meets five times a week.

This course is an in-depth study of algebraic principles, graphing quadratics and finding the maximized area. Students will study algebraic concepts through activities and projects which involve a combination of conceptual understanding, procedural fluency and problem solving. This 1 semester course culminates in a Math Panel Presentation at the end of the each semester

### **Unit Names with Essential Questions:**

1. Polynomial and Linear & Exponents Review:
  - a. I can identify the properties of an exponent?
  - b. I can add, subtract, multiply and divide exponents
  - c. I can add, subtract, multiply and divide polynomials
  - d. I can factor polynomials with GCF
  - e. I can factor fractions that are polynomials in both the numerator and denominator
    - i. I can identify vocabulary for factoring
    - ii. I can find the LCM and GCF
2. Rational: Foundations of Rational
  - a. I can simplify rational expressions
  - b. I can add, subtract, multiply and divide rational expressions
3. Factoring and Quadratics
  - a. I can graph quadratic functions
  - b. I can alter a quadratic function change its graph
  - c. What is the quadratic function and how is it used
  - d. I can use the quadratic formula to find the roots
  - e. I can find the sum and product of roots
  - f. I can determine the quadratic discriminant

### **Semester Essential Questions:**

1. How can problem solving help us examine and solve historical mathematical problems?
2. How are the various mathematical representations related (words, equations, graphs, tables, equations)?
3. How can we use the various mathematical representations to model problems?
4. How can you simplify exponents and radical?
5. How can you evaluate rational expressions, radicals and exponents?
6. How can we factor quadratics?

7. How do we identify the parts of the parabola?
8. How do demonstrate my understanding of the functions, their graphs, and their applications, through a multi-dimensional assessment
9. How do I integrate math within the Smiles Project

UNIT 1: Exponents

- a. Assignments:
- b. Learning Activities: Do Now, Exit Ticket, Notes, Independent/Group activities
- c. Formative: Quizzes, Performance Tasks, Summative: Unit Exam

UNIT 2:Radicals

- a. Assignments:
- b. Learning Activities: Do Now, Exit Ticket, Notes, Independent/Group activities
- c. Formative: Quizzes
- d. Summative: Unit Exam

UNIT 3:Quadratics and Parabola

- a. Assignments:
- b. Learning Activities: Do Now, Exit Ticket, Notes, Independent/Group activities
- c. Formative: Quizzes, Panel Checkpoints
- d. Summative: Panel Part I, Unit Exam

UNIT 4:Complex numbers

- a. Major Assignments:
- b. Formative: Panel Checkpoints
- c. Summative: Panel Paper, Panel Presentation
- d. Presentations will be held during Regents Week:

***Common Core***

The Complex Number System	Seeing Structure in Expressions	Arithmetic with polynomials & Rational Expressional	Linear, Quadratic, & Exponential Models
<ul style="list-style-type: none"> <li>● HSN-CN.C.8</li> <li>● HSN-CN.C.9</li> </ul>	<ul style="list-style-type: none"> <li>● HSA-SSE.A.1</li> <li>● HSA.SSE.A.2</li> <li>● HSA-SSE.B.4</li> </ul>	<ul style="list-style-type: none"> <li>● HSA-APR.A.1</li> <li>● HSA-APR.B.2</li> <li>● HSA-APR.B.3</li> <li>● HSA-APR.C.4</li> <li>● HSA-APR.C.5</li> <li>● HSA-APR.D.6</li> <li>● HSA-APR.D.7</li> </ul>	<ul style="list-style-type: none"> <li>● HSF-LE.A.4</li> </ul>

Reading	Writing
<ul style="list-style-type: none"> <li>● RST.9-10.1</li> <li>● RST.9-10.2</li> <li>● RST.9-10.3</li> <li>● RST.9-10.4</li> <li>● RST.9-10.5</li> <li>● RST.9-10.7</li> <li>● RST.9-10.8</li> </ul>	<ul style="list-style-type: none"> <li>● WHST.9-10.1</li> <li>● WHST.9-10.2</li> </ul>

- |               |  |
|---------------|--|
| ● RST.9-10.10 |  |
|---------------|--|

### **Expectations as an FHS Student**

We have high expectations for our students. Your teachers, advisors and all staff members believe that you have the capacity to be successful academically and achieve your dreams. We also want you to understand that as an FHS is a safe learning community and we believe that all students can be upstanders and use their voices to create positive change for themselves, their loved ones and their communities. In order to maintain such a learning community, the following are some important expectations of you as a student:

- **NO PHYSICAL FIGHTING OR PLAY FIGHTING:** You have the right to feel safe in school. So do your peers. You also need to learn to solve problems and compromise respectfully without fighting. FHS is a professional learning community so even play fighting is not acceptable behavior as it does not demonstrate professionalism and can often lead to accidents or fights.
- **COME EVERY DAY IN FHS DRESS CODE:** FHS is a professional learning community and we expect you to dress for success! Your clothing demonstrates professionalism and will help prepare you for college and careers in the future.
- **COME TO SCHOOL EVERYDAY:** Your attendance is key to your academic success. You need to be present not only to learn the necessary material, but to be a part of the school community and to add to class and advisory discussions. You are expected to maintain at least a 90% attendance average in school. That means at most, you should only miss one out of every 10 days, or 4 days a cycle. You get out of school at 1:30 on Wednesdays, so all non-emergency appointments should be made during this time.
- **PRACTICE RESPECTFUL LANGUAGE AND BEHAVIOR:** FHS is a safe learning community. We value your unique, individual identity and want you to appreciate and value the identities of your community members. We are a bully-free zone, which means that you will respect all members of our community and will use positive and tolerant language within the school community, including Facebook and other online forums. You will not use language to make fun of or hurt another member of the community. This includes insults, cursing, racist, or homophobic remarks. Language is powerful. You need to be accountable for your words and understand the impact of your words on others. We believe that language should be used to build relationships and positive learning communities and not used for harm.
- **DO YOUR BEST AND BE AN ACTIVE PARTICIPANT IN YOUR EDUCATION:** Everyday that you walk through our school doors, you have made the choice to learn. You have made the choice to work towards your dreams. So when you are in school, you also need to choose to do your best in classes. We are here to help and support you. You are not expected to know everything in class, or to always know what the best choices are in a situation – you are here to learn those things. But we do expect that you are patient with yourself and others while you are learning, that you ask for and accept help when you need it, that you try and take risks, and that you contribute to classes in a positive, respectful manner.
- **CHOOSE TO BE AN UPSTANDER:** An upstander is someone who makes choices that help not only themselves, but better the lives of others. Upstanders do the right thing in moments of injustice. Upstanders choose to help others in need, speak up for people when they cannot speak up for themselves and speak up when they see something that is unfair. An upstander works to create positive change for themselves, their loved ones and their communities.

### **Layered Curriculum**

The purpose of this layered curriculum is to make you, the student, responsible for your own learning. Coming to class and simply completing “something” will no longer qualify for a passing grade. Much of what you will learn **MUST be orally defended**. In other words, you must be able to have a discussion with the teacher about what you learned. In

addition, you are assessed on what you have learned everyday. It is your responsibility to get additional help what you need it. Tutoring days will be announced week 2 of classes. Please make sure you attend tutoring if you are not doing well on your daily quizzes. Remember it is not what you say you know, but how well you can show you know the content. Your grades are mostly based on how well you show you understand the material.

**FHS Common Grading Policy:**

- **Learning Activities (homework, classwork, participation):** at least 60-80 graded, entered assignments a semester
  - 60 learning activities = 3 graded, entered assignments a week/20 per progress report
  - 80 learning activities = 4 graded, entered assignments a week/approximately 26 per progress report
- **Formative Assessments:** at least 8-10 a semester
- **Summative Assessments:** at least 4-6 summative assessments a semester

Grades are given in report cards 2x a year along with a narrative about student skills, content knowledge and strengths and challenges. Twice a semester (4x a year), students also receive progress reports.

**Classroom Independence/Interdependence**

Please do not be late to class. Once in class your participation is required. If you are absent you must make up your missed work. Full class participation includes arriving on time and being ready to work. If you are not, then points may be deducted from your daily participation grade.

**Homework**

Students have homework every night. Students are expected to complete whatever work was not completed during the class period in preparation for the following class day. In addition, if all classwork was completed, students should use the resources on pupilpath and google classroom as a their homework and preparation for their quiz the next day.

**\*\*\*Deadlines are strictly enforced.** We have a lot to do to prepare for the Math Panel. It is crucial to make sure you meet all deadlines. Failure to meet deadlines will result in ineligibility to present your Panel. It is your responsibility to setup an appointment to meet with your teacher for tutoring on your project.\*\*\*

**Tentative Pacing Calendar:**

**SEPTEMBER 2018**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5 MATH AUTOBIOGRAPH Y	6 SCIENCE BEHIND LEARNING	7 MATHEMA TICAL PRACTICE	8
9	10	11	12	13	14	15

	NO SCHOOL	NO SCHOOL	SYLLABUS SCAVENGER HUNT	PROBLEM OF THE DAY OR VOCABULARY	FIELD DAY	
16	17  ZERO/NEG ATIVE EXPONENT S	18  MULTIPLYIN G EXPONENTS	19  NO SCHOOL	20  DIVIDING EXPONENTS	21  POWER TO POWER	22
23	24  COMBININ G EXPONENT RULES	25  REVIEW	26  EXAM	27  COVERTING RADICALS	28  SIMPLIFYIN G RADICALS	29
30						

## OCTOBER 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1  SIMPLIFYIN G EXPONENT RADICALS	2  SIMPLIFYING EXPONENTS RADICALS	3  ADDING AND SUBSTRACTING RADICALS	4  ADDING AND SUBTRACTING RADICALS	5  MULTIPLYI NG RADICALS	6
7	8  NO SCHOOL	9  MULTIPLYING RADICALS	10  DIVIDING RADICALS	11  DIVIDING RADICALS	12  REVIEW	13
14	15  EXAM	16  INTRODUCTION TO QUADRATICS	17  MULTIPLYING BINOMIALS	18  FACTORING A=1	19  FACTORING SPECIAL CASE AND A=1	20

21	22 FACTORING A>1	23 FINDING ZEROS	24 FACTORING GCF	25 FACTORING GCF	26 USING QUADRATIC FORMULA	27
28	29 QUADRATIC FORMULA	30 REVIEW	31 FORMATIVE			

## NOVEMBER 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 PARABOLAS	2 VERTEX AND ROOTS	3
4	5 GRAPHING	6 NO SCHOOL	7 GRAPHING	8 DISCRIMINANT AND SUM AND PRODUCT	9 VERTEX FORM STANDARD FORM	10
11	12 FORMATIV E	13 MAXIMIZED PROFIT	14 BEGIN PANEL	15 PANEL WORK PERIOD	16 PANEL WORK PERIOD	17
18	19	20	21	22	23	24

	PANEL WORK PERIOD	PANEL WORK PERIOD	PANEL WORK PERIOD 1 <sup>ST</sup> DRAFT DUE	NO SCHOOL	NO SCHOOL	
25	26  PANEL TEACHER EDIT WORK PERIOD 1 <sup>ST</sup> DRAFT DUE	27  PANEL TEACHER EDIT WORK PERIOD	28  PANEL TEACHER EDIT WORK PERIOD	29  PANEL TEACHER EDIT WORK PERIOD	30  PANEL TEACHER EDIT WORK PERIOD	

## DECEMBER 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3  TEACHER EDITS	4  WORK ON TEACHER EDITS – PAPERS ARE DUE	5  DEPARTMENT READS	6  TEAM UP WITH PAIR TO BEGIN PPT	7  BEGIN PPT	8
9	10  PPT WORK PERIOD	11  PPT WORK PERIOD	12  PPT WORK PERIOD	13  PPT WORK PERIOD	14  PPT ARE DUE	15
16	17	18	19	20	21	22

	TASKS PROJECT AND EXTRA CREDIT ASSIGNMEN T	TASKS PROJECT AND EXTRA CREDIT ASSIGNMENT	TASKS PROJECT AND EXTRA CREDIT ASSIGNMENT	TASKS PROJECT AND EXTRA CREDIT ASSIGNMENT	TASKS PROJECT DUE	
23	24  NO SCHOOL	25  NO SCHOOL	26  NO SCHOOL	27  NO SCHOOL	28  NO SCHOOL	29
30	31  NO SCHOOL					

## **JANUARY 2019**

Sunday    Monday    Tuesday    Wednesday    Thursday    Friday    Saturday

		1  NO SCHOOL	2  FINAL EDITS & EXTRA CREDIT DUE	3  FINAL EDITS TEACHER CHECK IN	4  FINAL EDITS	5
6	7  CONTENT QUESTIONS	8  CONTENT QUESTIONS	9  REVIEW	10  REVIEW	11  SUMMATIVE ASSESSMEN T	12
13	14  MOCK PRESENTATI ON	15  MOCK PRESENTATIO N	16  MOCK PRESENTATIO N	17  ALL DRAFTS MUST BE SUBMITTED	18  MOCK PRESENTATI ON	19
20	21	22	23	24	25	26



	NO SCHOOL	PANEL PRESENTATION	PANEL PRESENTATION	PANEL PRESENTATION	PANEL PRESENTATION	
27	28 NO SCHOOL	29 SPRING TERM BEGINS	30 INTRODUCTION TO AREA AND PERIMETER	31 INTRODUCTION TO AREA AND PERIMETER		

Please return this portion to your teacher

Student Name: \_\_\_\_\_

Student Email Address: \_\_\_\_\_

Parent/Guardian Name: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Cell Phone: \_\_\_\_\_

Parent/Guardian Email Address: \_\_\_\_\_

I have read the above contract and expectations and will do my best to follow the rules and be a successful student in this class.

Student Signature: \_\_\_\_\_

I have read the above contract and expectations and will do my best to help my child to follow the rules and be a successful student in this class.

Parent/Guardian Signature: \_\_\_\_\_