**Algebra II**

**Course Syllabus: 2015-2016**

1. **Instructor Information**

Teacher:

Contact Information: Please feel free to call or e-mail me about any questions. If you call or e-mail before 9:00 pm I will try to respond that evening.

1. Phone:

2. E-mail:

1. **Course Description**

Algebra II is designed to equip students with the knowledge, skills, and appreciation to enjoy God’s order in creation and applications in the real world. This course is an overview of basic algebra review, linear relations, systems of equations, matrices, quadratic equations with complex solutions, polynomial functions, radicals, exponents, exponential and logarithmic functions, rational expression, trigonometry, probability, statistics, sequences, and conic sections. Some recreational mathematics are included in this course.

1. **Rationale**

This course focuses on the ABCs of mathematics; application, beauty, and consistencies. We want to praise our Creator while studying His laws that govern the universe.

1. **Goals and Aims**

A. **Enjoy** thinking rationally and analytically

B. Appreciate law, order, and absolutes.

C. Promote interest in mathematics

D. Be well prepared for higher math courses

E. Develop general problem solving abilities

1. **Objectives**

A. Graph linear equations

B. Solve various trigonometry problems

C. Graph various types of expressions

D. Solve linear and quadratic functions

E. Solve systems of equations and inequalities.

F. Compute expressions with powers and roots

G. Solve matrices

I. Factor polynomials

J. Predict arithmetic and geometric sequences

K. Solve logarithmic equations

L. Simplify rational expressions

M. Solve rational equations

N. Define minima and maxima

O. Memorize the quadratic formula

1. **Textbooks and Instructional Recourses**

*Algebra I* – BJU Press

Teacher Toolkit – BJU Press

Kuta Software

*mathisfun.com*

*khanacademy.org*

1. **Equipment and materials**

A. Compass

B. Ruler

C. Protractor

D. Scientific Calculator

E. Notebook

1. **Course Requirements**

The prerequisite to this course is a 70% or higher in Algebra I, or math placement exam.

A. **Logistics**

1. Keep a notebook of class lecture notes.

2. Attend class five days a week, teacher or principal must be notified ahead of time if student is going to be missing.

3. There will be approximately 18 exams throughout the year.

4. Quizzes will occur about once a week.

5. Absent students are responsible for all catch-up work.

6. Voluntary fix-ups must be in my office by the end of the day.

B. **Projects**

Project #1 Golden Gate Bridge measurements.

Project #2 Angry Birds “The Parabola Edition”

Project #3 The iBot Project. A stair climbing wheelchair?

Project #4 The Taffy Production Manager

1. **Procedures**
   1. All homework will be due the following class period unless otherwise instructed.
   2. All papers will be handed across and then front.
   3. Late homework will be penalized one increment (A to B) per class period overdue, and unfinished slips will be given appropriately. ( PVMS policy)
   4. Most classes will begin with in-class homework grading. Students will exchange with designated partners.
   5. Questions while grading should be marked with question marks and saved until the end.
   6. Tests and quizzes should be overturned and placed on the corner of one’s desk when finished, all edges must be smooth
   7. Headings must include student’s name and lesson/assignment number. All homework shal be done in pencil.
   8. Student will record daily homework assignments.
2. **Methods**

A. Teaching Methods

1. Lectures 2. Demonstrations 3. Cooperative learning

4. Board drills 5. Projects 6. Multimedia

B. Assessment

1. Exams 2. Quizzes 3. Review 4. Homework

1. **Grading Policies**

A. Exams 50% B. Quizzes 20% C. Homework 20% D. Projects 10%

**Intermediate work, if needed, must always be shown to get full credit, even if you use a calculator.  I generally give partial credit on tests and quizzes for correct work even if the final answer is incorrect.**

1. **Course Outline**

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| Week Number | Chapters | Dates |  | |  |
| Week 1 | Chapter 1 Basic Algebra | Aug. 26-28 | Introduction to Course  1.1 – 1.4 | |  |
| Week 2 | Aug. 31-Sept.4 | AAW, Lessons 1.5 – 1.8 | |  |
| Week 3 | Sept. 7-11 off Monday | TC, 1.9 DM, | |  |
| Week 4 | Chapter 2 Linear Relations | Sept. 14-18 | Review, Test, 2.1- 2.2, MH | |  |
| Week 5 | Sept. 21-25 | Lessons 2.2 – 2.5, TC | |  |
| Week 6 | Sept.28-Oct.2 | Lessons 2.6-2.7, DM, Review, Test | |  |  |
| Week 7 | Chapter 3 Solving Systems | Oct. 5-7 | Lessons 3.1 – 3.2, TC | |  |  |
| Week 8 | Oct. 12-16 | Lessons 3.3 – 3.6, MAW | |  |
| Week 9 | Oct. 19-23  2 Extra Days | DM, Review, Test | |  |
| Week 10 | Chapter 4  Matrices  Chapter 5  Quadratic Equations | Oct.26-30 End of First Quarter | Lessons 4.1 – 4.3 - MH | |  |
| Week 11 | Nov.2-6  Extra Day | Lessons 4.4 – 4.6, TC | |  |
| Week 12 | Nov. 9-13 | DM, Review, Test, Lessons 5.1 – 5.2 | |  |
| Week 13 | Chapter 5  Quadratic Equations | Nov. 16-20 | Lessons 5.3 – 5.7 | |  |
| Week 14 | Nov. 23-24 Extra Day | Lesson 5.8 | |  |
| Week 15 | Dec. 1-4  Extra Day | TC, Lessons 5.9, AAW, DM | |  |
| Week 16 | Chapter 6 Polynomial Functions | Dec 7-11 | Review, Test, Lessons 6.1- 6.4, TC | |  |
| Week 17 | Dec. 14-18 | Lessons 6.5 – 6.7 MH, 6.8 | |  |
| Week 18 | Dec. 21 | DM, Review, Test | |  |
| Week 19 | Chapter 7 Radicals and Exponents | Jan. 4-8  End of 2nd Quarter | Lessons 7.1 – 7.4, AAW | |  |
| Week 20 | Jan. 11-15  Extra Day | Lessons 7.5, TC, 7.6 -7.7 | |  |
| Week 21 | Jan. 18-22 | Lessons 7.8, DM, Review, Test | |  |
| Week 22 | Chapter 8 Exponential and Logarithmic Functions | Jan. 25-28  Extra Day | Lessons 8.1- 8.2, TC, 8.3 | |  |
| Week 23 | Feb. 1-5 | Lessons 8.4 – 8.7, MH | |  |
| Week 24 | Feb. 8-12  Extra Day | Lessons 8.8, DM, Review, Test | |  |
| Week 25 | Chapter 9 Rational Expressions and Equations | Feb. 15-19 | Lessons 9.1- 9.4, AAW | |  |
| Week 26 | Feb. 22- 25 | Lessons 9.5 – 9.6, TC, 9.7, DM | |  |
| Week 27 | Feb. 29-Mar. 4  3 Extra Days | Review, Test | |  |
| Week 28 | Chapter 10 Trigonometry  Chapter 11 Trigonometric Ratios | March 7-11 | Lessons 10. 1 – 10.4, TC | |  |
| Week 29 | March 14-18  End of third Quarter | Lessons 10.5, MH, 10.6 – 10.8 | |  |
| Week 30 | March 21-23 Extra Day | DM, Review, Test, 11.1 | |  |
| Week 31 | Chapter 11  Trigonometric  Ratios  Chapter 12  Sequences  and Series | March 28 -Apr. 1 | Lessons 11.2, TC, 11.3, AAW, 11.4 | |  |
| Week 32 | Apr. 4-8 | Lessons 11.5 – 11.6, DM, Review, Test | |  |
| Week 33 | Apr. 11-14  Extra Day | Lessons 12.1, TC, 12.2 – 12.3 | |  |
| Week 34 | Chapter 12  Sequences  and Series  Chapter 13  Probability and Statistics | Apr. 18-22 | Lessons 12.4, MH, 12.5 – 12.6, DM | |  |
| Week 35 | Apr. 25-29 | Review, Test, 13.1 – 13.3 | |  |
| Week 36 | May 2-4  Extra Day | Lessons 13.4, AAW, 13.5 – 13.6 | |  |
| Week 37 | Chapter 13  Probability and Statistics  Chapter 14  Conic Sections | May 9-13  Extra Day | TC, 13.7 – 13.8, DM | |  |
| Week 38 | May 16-20 | Review, Test, 14.1 – 14.2, TC | |  |
| Week 39 | May 23-24  -2 Days | Lessons 14.3 – 14.6, Review Test | |  |
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