## **Advanced Functions and Modeling Course Syllabus**

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**Course Description:**

Advanced Functions and Modeling provides students an in-depth study of modeling and applying functions. Home, work, recreation, consumer issues, public policy, and scientific investigations are a few of the areas from which applications may originate. Appropriate technology, from manipulatives to calculators and application software, will be used for instruction and assessment.

**Course Units**

• Unit 1 – Functions

• Unit 2 – Triangle Trigonometry

• Unit 3 – Circular Trigonometry

• Unit 4 – Exponential and Logarithmic Functions

• Unit 5 – Sequences and Series

• Unit 6 – Statistics

• Unit 7 – Counting and Probability

**Topics include but not limited to:**

\*Combinatorics \*Statistics \*Inverse of Functions

\*Probability \*Piecewise Functions \*Domain & Range

\*Logarithmic Functions \*Advanced Functions \*Set & Interval Notation

\*Circular Trigonometry \*Sequences and Series \*Radicals & Rational Exponents

\*Composition of Functions \*Data Collection

**Required Materials:**

You will need a 3 ring binder for this course, stocked with loose-leaf paper. Sometimes you will take notes on your own paper, other times you will be given a hand out for guided notes. To keep these organized, I am suggesting that you have a three ring binder.

A graphing calculator is required in this class. I do have some available for use during class time, but they may not always be available to be taken out of the classroom. Students are expected to complete any homework problems requiring a graphing calculator.

**Grading Policy**

**Quarter Grades:** **Semester Grades:**

Classwork 10% First Quarter 37.5%

Homework 20% Second Quarter 37.5%

Quizzes 30% Final Exam: 25% (NCFE)

Tests/Projects 40%

All students will receive progress reports every three weeks during each grading period. Please show these to your parent(s) or guardian(s). Parents may email me with any concerns about graded assignments.

**Homework:**

The more homework you do, the better your grades will be. I am looking for effort, work and completion, not a list of answers. I will check homework daily throughout the semester. Students will have accuracy homework assignments as well as completion homework assignments.

For completion assignments, student must complete each problem in order to be given credit or it will be a zero. For accuracy assignments, students will receive a grade based on the percentage they actually got correct. Regardless of the assignment **Late work will not be accepted and will result in a zero.**

**Keys to success:**

***\*\*Do your homework!!*** At the very least, attempt the homework and ask questions about what you don’t understand. Do not give up after being confused about one problem. Always make an attempt to do every item.

***\*\*Come for help!!*** Adjust your work/athletic/social schedule in order to come for help. It might be the difference between passing and failing (***graduating or not graduating***)

**Behavior Expectations:** The school-wide discipline code will be adhered to in this class. Failing to follow the rules may result in a discipline referral. Please do not bring food or drink (other than bottled water) into the classroom. Keep cell phones off and out of sight. When the tardy bell rings, you should be seated, ready to work with your homework out. We will use the entire class period, so be prepared.

**Absences (including school functions)**

* ***The student is responsible*** for making up ***all work*** missed as a result of being absent from class.
* If only absent for one day, ***the student is expected to take the assessment on the scheduled day.*** An exception may be made when new material was only available the day before the assessment.
* ***It is the student’s responsibility*** to arrange a time to make up any assessments that were missed.
* ***It is the student’s responsibility to make up an assessment within one week*** of the original date it was given.
* ***Students may need to rearrange schedules in order to make up an assessment***. (work, sports, social life, etc.)

**Assessments:**

* ***No work, no credit! This means that you MUST show ALL steps which supports your answer ot no credit will be given.***
* ***Tests and quizzes have a time limit***. You become more efficient when you do your homework and classwork, and this may help you finish assessments in the allotted time. Students who know the material well and are prepared for assessments should have no difficulty finishing them in the time provided. All unanswered items will receive no credit. Yes, I will collect your unfinished assessment!
* ***Make-ups:*** Students must make up an assessment within one week of the original administration date. Failure to do so may result in a grade of zero. Assessment dates are posted in the classroom, so it is the students’ responsibility to know when assessments are given.
* ***Cheating:* Any student caught cheating on homework, quizzes, or tests will receive a 0 for that assignment. These assessments may not be re-taken by the student. Cheating will also result in a referral to administration.**

**Other information:**

* ***The student is responsible*** for knowing the mathematical concepts that came prior to this course. Algebra and calculator skills are particularly vital to success in this course.
* ***Extra help is available during out in school tutoring held during AE from 12:30 -1:00.*** Students must tell the teacher ahead of time that they are coming to tutoring. If you are coming for extra help, please come with an agenda. It is your responsibility to determine what you are having difficulty with and what you would like to work on. Do not come into extra help and ask me to re-teach an entire chapter. Also, be aware that extra help is provided for students who have shown sufficient effort in class (paid attention, asked questions, completed homework and classwork). ***Do not* expect me to stay after school if you have not done your job during our regular class time.**