

# Advance Functions and Modeling

*Ms. Hohman – Room 214*

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Welcome to AFM! I am very excited for this school year. I hope you are as well. Advanced Functions and Modeling continues the development of conceptual understanding and application of functions and modeling. Topics covered in the course include data analysis, linear models, recursion, trigonometric functions, logarithmic functions and exponential functions. Students will also extend their knowledge of various functions and probability. Appropriate technology such as calculators and applications software will be used regularly for instruction and assessment. Additional topics, seminars, and projects with real world applications are included. An in-depth passing guide is provided on the past page of the syllabus.

## Rules

1. Be on time, on task and prepared to learn everyday
2. Respect the teacher, the classroom, other students, and yourself
3. Take responsibility for your own learning
4. Clean up after yourself and your peers
5. Keep all personal electronics put away

## Discipline Plan

My discipline plan will follow the “6 Expectations of Terry Sanford School”. They generally consist of the following:

- 1<sup>st</sup> time...warning/conference with student.
- 2<sup>nd</sup> time...contact parent.
- 3<sup>rd</sup> time...contact parent and lunch detention.
- 4<sup>th</sup> time...contact parent and after school detention.
- 5<sup>th</sup> time...inform parent of referral to administration.

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### Materials Required

Spiral Notebook (at least 150 pages)

Or 3 Ring Binder

Loose-leaf paper

Pencils\*\*

Colored Pencils\*\*

Markers\*\*

*\*\*These items are only required if you do not want to use the class set.*

Personal Device\*

*\*Your device is to be used for educational purposes only and at designated times. Any other use is grounds for collection of device.*

TI-84 Plus (provided in class)

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### Grading Policy

Homework/Classwork                      30%

Quizzes    30%

Tests    40%

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### Final Grade Policy

Midterm Average                      40%

Second Term Average                      40%

Final Exam    20%

*There will be at least two tests and four quizzes per quarter.*

***Tutoring is available Tuesday 7:30 – 8:15 am and Thursday 3:45 – 4:30 pm or after school by appointment.***

**Make-up work:** It is the student’s responsibility to get work and notes missed due to an excused absence. Excused absences include doctor’s appointments (must turn in a doctor’s note), school approved field trips, or funeral. If a student plans to be absent for any other reason, they need to arrange to get their work ahead of time so that they can turn it in the day they return. Assignments and notes will be posted on Google Classroom. Any handouts will be located in the student’s class folder. Students have 3 school days to turn in make-up work.

*Please encourage your students to be responsible for his/her learning. Attendance, class participation, completion of assignments and daily study is a must. I am here to help. Please do not hesitate to contact me at any time. Please sign below to indicate your understanding and support of the classroom system.*

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Anything I should know about your child:

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By signing this syllabus you thoroughly read and understand the expectations laid out in this document and agree to comply with the rules and regulations of this classroom:

Students Name \_\_\_\_\_ Date \_\_\_\_\_

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

Parent/Guardian Name \_\_\_\_\_ Date \_\_\_\_\_

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

Parent/Guardian Phone Number & Email:

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## Passing Guide:

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
<p><b>Functions and Polynomials, Exponential and Logarithms, and Statistics and Probability</b></p> <p><b>Bivariate Data: Linear, Polynomial, Exponential, Power, and Logarithmic Functions</b></p> <p>Interpret the Constants, Coefficients, and Bases</p> <p>Check Models for Goodness-of-Fit</p> <p><b>Univariate Data: Summarize and Analyze to Solve Problems</b></p> <p>Methods of Data Collection</p> <p>Measures of Central Tendency and Spread</p> <p>Normal Distribution Curve</p> <p>Graphical Displays of Data</p> <p>Compare Distributions</p> <p>Statistical Principles and Methods in Sample Surveys</p>	<p><b>Statistics and Probability/ Sequences and Series</b></p> <p><b>Univariate Data: Summarize and Analyze to Solve Problems</b></p> <p>Graphical Displays of Data</p> <p>Compare Distributions</p> <p><b>Theoretical and Experimental Probability</b></p> <p>Addition and Multiplication Principles</p> <p>Permutations and Combinations</p> <p>Simulations for Probability Models</p> <p>Expected Values and Fairness</p> <p>Discrete Random Variables</p> <p>The Binomial Theorem</p>	<p><b>Functions and Polynomials, Exponential and Logarithmic Functions, and Sequences and Series</b></p> <p><b>Logarithmic Functions to Model and Solve Problems</b></p> <p>Using Tables, Graphs, and Algebraic Properties</p> <p>Interpret the Constants, Coefficients, and Bases</p> <p><b>Piecewise-Defined Functions to Model and Solve Problems</b></p> <p>Using Tables, Graphs, and Algebraic Properties</p> <p>Interpret the Constants, Coefficients, and Bases</p> <p><b>Power Functions to Model and Solve Problems</b></p> <p>Using Tables, Graphs, and Algebraic Properties</p> <p>Interpret the Constants, Coefficients, and Bases</p> <p><b>Recursively-Defined Functions to Model and Solve Problems</b></p> <p>Sum of a Finite Sequence</p> <p>Sum of an Infinite Sequence</p> <p>Determine if a Series Converges or Diverges</p> <p>Recursive and Explicit Representations</p>	<p><b>Right Triangle, Trigonometry, and Applications</b></p> <p><b>Trigonometric Functions: Sine and Cosine to Model and Solve Problems (Note: Study Only Sine and Cosine)</b></p> <p>Using Tables, Graphs, and Algebraic Properties</p> <p>Transformations With Respect to Period, Amplitude, and Vertical and Horizontal Shifts</p> <p>The Law of Sines and the Law of Cosines</p> <p><b>Final Exam</b></p>