**MARSHALL COUNTY HIGH SCHOOL** Mrs. Charlotte Zajac

SYLLABUS FOR PRECALCULUS HONORS (Course Code 3126H-002 (3rd block)) Spring, 2017 Room #140

***Course Description:***

*Prerequisites:* Integrated Math III and/or minimum ACT Math Score of 19.

Precalculus is for those university path students planning a college curriculum which will require more than the minimum of science, math, and/or technology. This course, as its name implies, may serve as a lead-in for high school calculus or may be a final math course for those not desiring to take calculus at the high school level.

This year, we are participating in a Statewide Dual Credit pilot program, which will allow students to receive college credit for Precalculus upon successfully passing a Challenge Exam at the end of the course. The exam is required for all students enrolled in the class and will be given during school hours at no cost to the student. For more information, go to: https://tn.gov/education/topic/dual-credit .

***Course Outline:***

**First Quarter**

Unit One-Functions and Their Graphs

* Graphs of Equations
* Functions
* Analyzing Graphs of Functions
* A Library of Parent Functions
* Transformations of Functions
* Combinations of Functions: Composite Functions
* Inverse Functions
* Mathematical Modeling and Variation

Unit Two-Polynomial and Rational Functions

* Quadratic Functions and Models
* Polynomial Functions of Higher Degree
* Polynomial and Synthetic Division
* Complex Numbers
* Zeros of Polynomial Functions
* Rational Functions
* Nonlinear Inequalities

**HONORS CONTENT: Technology (graphing calculators) will be used to tie the graphical representation of functions to the analytical representation.**

**Second Quarter**

Unit Three-Exponential and Logarithmic Functions

* Exponential Functions and Their Graphs
* Logarithmic Functions and Their Graphs
* Properties of Logarithms
* Exponential and Logarithmic Equations
* Exponential and Logarithmic Models

**HONORS CONTENT: Students will design a presentation modeling exponential growth or decay in a group setting**

**Third Quarter**

Unit Four-Trigonometry

* Radian and Degree Measure
* Trigonometric Functions: The Unit Circle
* Right Triangle Trigonometry
* Trigonometric Functions of Any Angle
* Graphs of Sine and Cosine Functions
* Graphs of Other Trigonometric Functions
* Inverse Trigonometric Functions
* Applications and Models

**Fourth Quarter**

Unit Five-Analytic Trigonometry

* Using Fundamental Identities
* Verifying Trigonometric Identities
* Solving Trigonometric Equations
* Sum and Difference Formulas
* Multiple-Angle and Product-to-Sum Formulas

Unit Six-Additional Topics in Trigonometry

* Law of Sines
* Law of Cosines
* Vectors in the Plane

**HONORS CONTENT: Students will prepare a poster and descriptive story using an actual or proposed trip between three cities to illustrate the Law of Sines/Law of Cosines.**

***Supplies:***

* All assignments are to be written in **PENCIL** on **LOOSE-LEAF PAPER**.
* If you would like to donate supplies for the Student Table in our classroom, we’d love to have tissues, college-ruled notebook paper, graph paper or pencils.

***Course Curriculum:***

See State Standards at https://www.tn.gov/assets/entities/education/attachments/eps\_sdc\_precal\_learning\_objectives.pdf Textbook is *Precalculus with Limits, 3rd edition by Ron Larson.* There is a companion website with solutions to all odd-numbered exercises: [www.calcchat.com](http://www.calcchat.com)

***Classroom Rules:***

Rules will be discussed during class, but basically revolve around RESPECT, for yourself, others and

school property. You can access current Marshall County School Board Policy at http://boardpolicy.net/

documents/type.asp?iType=6&iBoard=24 and the MCHS Handbook at http://mchs.marshall.k12tn.net/ .

Any infractions will be handled on a case-by-case basis and will progress as follows:

|  |  |
| --- | --- |
| 1st Offense | Documented Warning |
| 2nd Offense | Classroom Consequence (depending on severity of offense) |
| 3rd Offense | Parent/Guardian contact |
| 4th Offense | Discipline referral to administration |

|  |  |
| --- | --- |
| ***Grading Scale:***  A 93-103  B 85-92  C 75-84  D 70-74  F 0-69 | ***Grading Categories:***  Homework 10%  Assessments 40%  Quizzes/Labs 20%  9 weeks tests 15%  Projects 15% |

***Four points will be added to the final grade for statewide dual credit students.***

***Student Expectations:***

***Attendance:***

It is impossible to replicate a class that has been missed and, because we use block scheduling, each

school day is equivalent to two regular class periods. Please try and schedule appointments around

classes when possible.

***Make-up Work:***

It is the student’s responsibility to ask for make-up work, including any quizzes or tests that have been

missed. Board policy states that a student is allowed one day per day of absence to make up any missed

work (Policy #6.2001). Grades will be posted at least weekly so students can monitor any missed assignments and their current grade. In addition, there is an online parent portal available so parents can log on and check grades at any time. If you need your login credentials, email Betsy Gentry at: [gentryb4@k12marshalltn.net](mailto:gentryb4@k12marshalltn.net)

***Project:***

All students will be required to complete two projects during the semester (one per nine week grading

period) that will represent 15% of their grade. They will be graded individually and very little class time

will be used to work on them.

***Parent-Teacher Communication:***

The best way to communicate with me is through email: czajac@k12marshalltn.net . You may also leave a message in the office (phone number is (931) 359-1549) and I will return your call during my planning

time or after school.

I will periodically send text messages to those who subscribe to the service. Students and parents are encouraged to subscribe by texting **@zajac3rd** to **81010** (3rd block).

I have a web page that can be accessed through a link on the MCHS web site; please check it periodically for updates and changes.

***Remediation/Tutoring/Test Makeup:***

I will be available most mornings from 7:20 – 7:45am in my classroom and at other times by request.

***Classroom Renaissance Incentives:***

For students who have earned Renaissance cards, the following incentives will be given in this class:

|  |  |
| --- | --- |
| Blue Card | 25 points added to lowest test grade |
| White Card | 20 points added to lowest test grade |
| Black Card | 15 points added to lowest test grade |
| Gray Card | 10 points added to lowest test grade |
| Red Card | 5 points added to lowest test grade |

Awards cannot be combined; higher award will be given.

By signing below, I acknowledge that I have read and understand all portions of the syllabus for Precalculus Honors (please return this page only).

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

Parent/Guardian Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Phone Number:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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