MTH103: INTRODUCTION TO PRECALCULUS

THIS COURSE REQUIRES A FINAL EXAM

SYLLABUS

READ THESE INSTRUCTIONS NOW!

Keep work organized by week, clearly labeled and typed or copy/paste onto your syllabus. Math and hand done projects: photograph, scan or screenshot and copy/paste to your syllabus. Keep images small so your file isn't too large to submit or save work as a PDF. Go to "Student Services" online for any issues with this course. If you need Microsoft Word, request an email from Student Services and follow the steps given to you.

- **SUBMITTING WORK: YOU MUST SUBMIT ALL WEEKS AT ONCE on one file. Your syllabus may be submitted separately if you chose not to add your work to it. Go to the website and select "Submit Work", complete the form and attach your work. You may also share a public link such as Gdocs. You have two attempts at receiving a passing grade of "C" or better so submit your full effort original work. Do not mail work. You will receive a reply in about 5 business days. Do not call or email asking for us to verify your work. All components of your course must be completed by the end of the 8th week from the time of your registration; 12 weeks for a 2 credit class. If you have a medical emergency or disability preventing you from completing your class, contact "Student Services" and send an email to request up to a 2-week extension**

YOUR BOOKS

USE YOUR PRECALCULUS TEXTBOOK – PDF – DOWNLOAD

PRECALCULUS WORKBOOK: Complete as you go along and submit all work in Week 5 from pages 3 – 30.

FUNCTIONS REVIEW AND PRACTICE BOOK: You will complete this practice book and submit for Week 6 Exercise Set 1.1 # 1- 74

Go to "Homework Help" from the menu for online calculators

WEEK ONE

REVIEW: https://schoolyourself.org/learn/precalculus

Complete the following study videos on Real Numbers – take notes

Integers

Rationals

Irrationals

Real Numbers

SHARE NOTES HERE

REVIEW: https://schoolyourself.org/learn/precalculus

Complete the following study videos on Imaginary & Complex Numbers – take notes

Imaginary and Complex Numbers

Working with Imaginaries

Complex Numbers

The Complex Plane

Powers of *i*

SHARE NOTES HERE

Study & Practice: https://schoolyourself.org/learn/precalculus

Complete the following study videos on Functions - take notes

Relations

Functions

Functional Notation

Continuity and Smoothness

Describing Functions

Concavity

Odd and Even Functions

SHARE NOTES HERE

WEEK TWO

Read & Study: Pre-calculus Textbook

1.1 Functions and Function Notation – Read & Study

1.) What is a function?

2.) Give an example of a function.

Do Section 1.1 Exercises beginning on Page 13: 1, 3, 5, 7, 11, 21

ADD RSPONSES HERE

Intervals and Interval Notation – Watch and take notes:
https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/v/introduction-to-interval-notation

Share notes here

What is the Domain of a Function – Watch and take notes:
https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/v/domain-of-a-function-intro

Share notes here

What is the range of a function – Watch and take notes:
https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/v/range-of-a-function

Share notes here

Word Example: Domain and Range from Graph:
https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/v/domain-and-range-from-graphs

Share notes here

Practice Domain and Range from Graph:
https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/e/domain_and_range_0.5

Screenshot score and place here

Read & Study: Pre-calculus Textbook

1.2 Domain and Range – Read & Study

1.) Define “Domain”.

2.) Define “Range”.

Do Section 1.2 Exercises beginning on Page 31: 1, 7, 13, 15, 23, 25

ADD RSPONSES HERE

Read & Study: Pre-calculus Textbook

1.3 Rates of Change and Behavior of Graphs – Read & Study

1.) What does "Rate of Change" describe?
2.) The average rate of change between two input values is _____
3.) A function is increasing on an interval if _____
4.) A function is decreasing on an interval if _____
5.) Define "local minimum".
6.) Define "local extrema".
7.) When is a function, "concave up"?
8.) When is a function, "concave down"?
9.) What is known as an, "inflection point"?

Do Section 1.3 Exercises beginning on Page 46: 1, 3, 5, 7, 11, 31, 39

ADD RESPONSE/S/ HERE

Study & Practice: https://schoolyourself.org/learn/precalculus

Complete the following study videos on Playing with Functions – take notes

Piecewise Functions

Compositions

SHARE NOTES HERE

WEEK THREE

Intro to Composition of Functions – Watch and take notes:
https://www.khanacademy.org/math/algebra2/manipulating-functions/function-

composition/v/function-composition

Share notes here

Practice: https://www.khanacademy.org/math/algebra2/manipulating-functions/function-composition/a/introduction-to-function-composition

Share Notes here

Practice II: https://www.khanacademy.org/math/algebra2/manipulating-functions/function-composition/a/finding-and-evaluating-composite-functions

Share notes here

Evaluating Composite Functions – Watch and take notes:
https://www.khanacademy.org/math/algebra2/manipulating-functions/function-composition/v/evaluating-composite-functions

Share notes here

Practice III: https://www.khanacademy.org/math/algebra2/manipulating-functions/function-composition/e/evaluate-composite-functions-from-formulas

Screenshot score and share here

Read & Study: Pre-calculus Textbook

1.4 Composition of Functions – Read & Study

Do Section 1.4 Exercises beginning on Page 57: 1, 7, 9, 17, 23

ADD RESPONSE/S/ HERE

Transformations Part I – Watch and take notes:
https://www.khanacademy.org/math/multivariable-calculus/thinking-about-multivariable-function/multivariable-transformations/v/transformations-part-1

Share your notes here

Transformations Part II – Watch and take notes:
https://www.khanacademy.org/math/multivariable-calculus/thinking-about-multivariable-function/multivariable-transformations/v/transformations-part-2

Share your notes here

Transformations Part III – Watch and take notes:

https://www.khanacademy.org/math/multivariable-calculus/thinking-about-multivariable-function/multivariable-transformations/v/transformations-part-3

Share your notes here

1.5 Transformation of Functions – Read & Study

Do Section 1.5 Exercises beginning on Page 82: 1, 9, 11, 25, 39

ADD RESPONSE/S/ HERE

Intro to Inverse Functions – Watch and take notes:
https://www.khanacademy.org/math/algebra2/manipulating-functions/introduction-to-inverses-of-functions/v/introduction-to-function-inverses

Share notes here

Study and Take notes: https://www.khanacademy.org/math/algebra2/manipulating-functions/introduction-to-inverses-of-functions/a/intro-to-inverse-functions

Share notes here

Inputs and Outputs – Watch and take notes:
https://www.khanacademy.org/math/algebra2/manipulating-functions/introduction-to-inverses-of-functions/v/understanding-inverse-functions

Share notes here

Graphing – Watch and take note: https://www.khanacademy.org/math/algebra2/manipulating-

functions/introduction-to-inverses-of-functions/v/understanding-function-inverses-example

Share notes here

Practice: https://www.khanacademy.org/math/algebra2/manipulating-functions/introduction-to-inverses-of-functions/e/understanding-inverse-functions

Screenshot your score and share here

1.6 Inverse Functions – Read & Study

Do Section 1.5 Exercises beginning on Page 96: 3, 7, 9

ADD RESPONSE/S/ HERE

WEEK FOUR

Recognizing Linear Functions – Watch and take notes:
https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/linear-nonlinear-functions-tut/v/recognizing-linear-functions

Share notes here

Read & Study: Pre-calculus Textbook

Chapter 2 – Linear Function Exercises

Do Section 2.1 Exercises Beginning on Page 107: 1 – 8; 14 – 22; 30 – 33

Do Section 2.2 Exercise #1 – 8; 20 – 24; 34 – 38

Do Section 2.3 Exercise #1 – 5; 12 – 14

Do Section 2.4 Exercise #6 – 12

Do Section 2.5 Exercise #3 – 7; 17 – 24

ADD RESPONSE/S/ HERE

WEEK FIVE

PRECALCULUS WORKBOOK 1: Submit your assignments from page 3 thru

13; and Pages 17 thru 26 **Organize and clearly label work including your images.**
WEEK SIX **FUNCTIONS REVIEW AND PRACTICE BOOK: Complete your practice book and submit for Pages 20 thru 23**
Study & Request Final Exam