CCBC Calculus Syllabus

Mrs. Fucsko sarah.fucsko@lppacs.org

mrsfucsko.weebly.com

Course description

This course provides an introduction to the ideas and applications of calculus. This is the first of three courses that cover the topics of calculus at the collegiate level. The major topics in this course include limits and continuity, differentiation, applications of differentiation, and integration. When completed, this course will give passing students four college math credits through the Community College of Beaver County.

Objectives

Unit 0 – Preliminaries

- Review of Pre-Calculus
- Functions and graphs
- Inverse functions

Unit 1 – Limits and Continuity

- The limit of a function
- Algebraic computation of limits
- Continuity
- Exponential and logarithmic functions

Unit 2 – Differentiation

- Introduction to the derivative
- Techniques of differentiation
- Derivatives of functions
- Rates of change
- The chain rule
- Implicit differentiation

Unit 3 – Applications of the Derivative

- Extreme values of a continuous function
- Derivatives and sketching graphs
- Asymptotes and limits involving infinity
- l'Hopital's rule
- Optimization

Unit 4 – Integration

- Antidifferentiation
- Areas as the limit of a sum
- Riemann sums and the definite integral
- The fundamental theorems of calculus
- Basic integration and integration by substitution

Textbook

Calculus, 3rd edition, Strauss, Monty, Gerald Bradley and Karl Smith, Prentice Hall. ISBN 0–471–31902–3 (This is provided upon request)

Class Rules

- ➢ Respect yourself
- ➢ Respect others
- ➢ Respect your school
- ➢ The Student Handbook will serve as a guide for disciplinary actions.

Class Policies

- As this is a college class, you need to devise a system of note taking that works best for you. It is necessary to take and keep complete notes in order to be successful in this class.
- Grading will be based on a total points system. I encourage you to frequently check your progress on Powerschool.
- Students are expected to make up assignments according to their absence. Students will have a number of days equal to the number of days absent to complete missing work. As a student enrolled in a college course, you are responsible for contacting me about what work was missed.
- Being late to school, having a rehearsal, field trip, master class, lesson, or ANY other school activity means you are present in school that day and you are responsible for all assignments, whether you are in class or not. You MUST check in with me and provide assignments that are due in order to receive credit.
- Please email with any questions or concerns.

Remind

This semester, I will be using Remind to contact students for various announcements. Please text @lpcalculus to 81010 to sign up for contact. I will also answer questions via Remind, but only during office hours: Monday-Friday 8am-4pm.

An Important Note for Students and Parents/Guardians

- As this is a college level course, it is important for students to approach it as such. With that in mind, one of the major differences between college and high school is the responsibility that students have to take for their work and grades. Therefore, I will not be calling home to report poor grades or missed assignments. It is the students' responsibility to keep up with the course work and seek help when needed. However, if the parent/guardian wishes to have updates on progress and/or grades, please feel free to contact me at any time. I will also keep grades updated on PowerSchool. Thank You!

-Mrs. Fucsko

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