2019-2020

Calculus

Teacher: Mr. Rychcik
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Course Description: This course is designed for students who have completed Pre-Calculus and want to prepare for a more rigorous Calculus course after graduation. Topics to be covered limits, continuity, derivatives, integrals, and their applications.

Academic Fraud, Plagiarism and Cheating: Plagiarism is the practice of copying words, sentences, images and/or ideas for use in written or oral assessments without giving proper credit to the source. Academic dishonesty also involves the portrayal of someone else's work as one's own when such citations are inappropriate to the assigned task. Cheating is defined as giving or receiving illegal help on anything that has been determined by the teacher to be an individual effort. Academic dishonesty is a serious offense and will result in consequences which can significantly affect a student's course grade. See the Student Handbook for additional information.

Attendance: Class attendance requirements are in accordance with the James I. O'Neill Attendance Policy and the Eligibility Policy. School policy dictates that students who miss class for unexcused absences (to school or the period itself) may receive a zero for any work due or assigned during that class period. Additionally, assignments which require class participation may be negatively impacted by student absences. Consequently, regular and prompt class attendance is essential to the student's educational experience. Lateness to class will result in a consequence. If you are absent from class, it is your responsibility to get the notes and complete the missing work. If you are absent the day of a quiz/test, you will take it the next class period you are present.

Classroom Expectations: Be ready to learn each day. Get to class on time with your binder, pencil, calculator, and assignment(s) due that day. Expected behavior is based on respect for others. All classroom rules correlate with the James I. O'Neill Student Code of Conduct.

Grading: Student performance is measured in a variety of ways including participation, observed effort, classwork, homework, quizzes, and tests. Classwork can only be made up within one week of your absence. Grades will be based on the following percentages.

Labs- 20%

4-5 per semester, Lab requirements will be outlined upon assignment

Homework- 20%

No late HW accepted, weekly grades given.

Quizzes- 20%

Shorter assessments on specific skills/topics. 5+ per semester

Exams- 20%

Longer assessment on entire units. 2-3 per semester

Participation- 20%

Do you come on time? Actively engage in class discussions?

Course Grade (Overall)

20% - Quarter 1
20% - Quarter 2
10% - Midterm
20% - Quarter 3
20% - Quarter 4
10% - Local Final

Extra Help: Extra help is available Tuesday-Friday after school 1:54-2:24. Be sure to seek extra help early and often!! I will be located in room 109 for expanded day.

Parent Communication: Progress reports are provided approximately every five weeks. Parents you may contact me by email. My email is stanley.rychcik@hffmcsd.org

Topics to be covered

1. Pre-Reqs
    - 1.1. Slope and Equation of a Line
    - 1.2. Functions and Graphs
    - 1.3. Functions in Pieces
    - 1.4. Exponential Functions
    - 1.5. Logarithmic Functions
    - 1.6. Regressions
    - 1.7. Trigonometric Functions
    - 1.8. Twelve Basic Functions
2. Limits
    - 2.1. Intro to Limits (Algebraically and Graphically)
    - 2.2. Limits Involving Infinity
    - 2.3. Continuity
    - 2.4. Limit Laws
    - 2.5. Equations of a tangent line w/compositions
3. Derivatives
    - 3.1. Functions and Graphing Slopes
    - 3.2. Functions and Derivatives
    - 3.3. Graphs and Derivatives
    - 3.4. Derivatives that Fail!!!!!!!
    - 3.5. Rules for Differentiation
    - 3.6. Product and Quotient Rules
    - 3.7. Horizontal Tangents
    - 3.8. Vertical Motion
    - 3.9. Trig Derivatives
4. Derivative Rules cont.
    - 4.1. Compositions and Derivatives
    - 4.2. Chain Rule & Repeated Chain Rule
    - 4.3. Revised Power Rule
    - 4.4. Implicit Differentiation
    - 4.5. Implicit Trig Practice
5. Applications of Derivatives
    - 5.1. Related Rates
    - 5.2. First Derivative test
    - 5.3. Second Derivative test
    - 5.4. Mean Value Theorem
    - 5.5. Curve Sketching