

Calculus MCS21/MCS22
Mr. Shahom
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Fall & Spring 2019-2020

COURSE DESCRIPTION

- *Calculus* is a full-year course in the calculus of functions of a single variable. The course is intended for students who have already completed a college-preparatory mathematics sequence: algebra, geometry, trigonometry, and elementary functions (linear, polynomial, rational, exponential, logarithmic, trigonometric). Students will also investigate the relationship between algebraic and graphical concepts, applying this relationship to problem solving situations. Students will gain exposure to topics that will be necessary for mathematics courses at the post-secondary level.
- This course meets five days per week in 43 minute periods.

GOALS AND OBJECTIVES

- Students will develop their logical thinking skills.
- Students will learn, and improve on, their problem solving strategies.
- Students will learn and apply calculus concepts.
- Students will learn how to use technology in order to enhance their understanding of calculus.
- Students will be prepared for higher level college mathematics courses.

MAJOR UNITS OF INSTRUCTION (SUBJECT TO CHANGE)

- Functions, Graphs, and Limits (analysis of graphs, limits of functions including one-sided limits, asymptotic and unbounded behavior, continuity as a property of functions)
- Derivatives (concept of the derivative, derivative at a point, derivative as a function, second derivatives, applications of derivatives, computation of derivatives)
- Integrals (Riemann sums, interpretations and properties of definite integrals, applications of integrals, Fundamental Theorem of Calculus, techniques of antidifferentiation, applications of antidifferentiation, numerical approximations to definite integrals)

COURSE MATERIALS/RESOURCES

- This course will use an online textbook: *to be determined*
- The textbook will be supplemented by handouts and worksheets.
- A math notebook is required and must be brought to class every day; it must be kept neat and organized and may be checked at any time. When homework is reviewed in class, you are expected to correct any errors you may have made.
- Graphing calculators will be used regularly in class. It is strongly recommended that students purchase their own graphing calculators, preferably any of the Texas Instruments TI-83 or TI-84 family graphing calculators, as instructions will be tailored to these calculators. If you use a different calculator, you will need to learn how to use it on your own.

ASSESSMENTS & GRADING

- Each semester there will be six full-period examinations, with one class session devoted to review prior to each exam.
- Each exam is worth 100 points and is cumulative.
- Exam dates will be announced well in advance.
- Homework will be checked regularly and graded for completeness and effort, but usually not for accuracy.
- **MARKING PERIOD GRADES ARE CALCULATED BASED ON THE FOLLOWING:**
 - Exams..... 60%
 - Homework..... 15%
 - Classwork/Participation..... 25%
- Marking periods grades are cumulative. Your third marking period grade is the final grade for the semester, which will appear on your transcript.
- Late work will not be accepted without verifiable extenuating circumstances.

PARTICIPATION/ATTENDANCE/BEHAVIOR EXPECTATIONS

- Students are expected to participate actively during class, including note-taking, asking and answering questions, attempting all problems, and staying on task.
- Students are required to present problems at the front of the classroom on a regular basis.
- If you enter the class late or leave at any time during the class, you must sign the out-of-room log, stating the time of entry/exit and the reason you are arriving late or leaving the classroom.
- School rules and regulations will be followed. Eating is not permitted during class. Electronic devices should not be used during class unless given explicit permission by me.

LETTERS OF RECOMMENDATION FOR COLLEGES OR OTHER PROGRAMS

- In order to allow time for me to write a thoughtful and detailed letter of recommendation, you should see me in person (not by email) *at least* four weeks prior to the deadline. Requests made with less than four weeks' notice will be denied.

WEB SITE

- Important announcements, exam dates, homework assignments, and more will be posted at <http://www.shahomework.com>.

I have received a copy of the course syllabus for *Calculus* and understand I/my child will be held responsible for all of the course requirements and school policies described therein.

Student Name

Student Signature

Parent/Guardian Name

Parent/Guardian Signature

Preferred Method of Parent Contact

Phone _____

Email _____