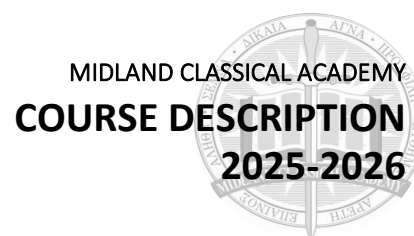


Calculus



Excellence is never an accident; it is the result of high intention, sincere effort, intelligent direction, skillful execution and the vision to see obstacles as opportunities.

Countless, unseen details are often the only difference between mediocre and magnificent.

GENERAL DESCRIPTION & PRIMARY OBJECTIVES

Calculus is an elective course offered to seniors at Midland Classical Academy who wish to challenge themselves with advanced mathematics. The course is designed to introduce students to concepts they will encounter in college if they choose to pursue a math or science degree. Many college honors programs (English, Business, Nursing, etc.) also require an upper-level math course like calculus in their curriculum. MCA Calculus will take one year to cover roughly the same material that college calculus courses cover in one semester. The emphasis will be on UNDERSTANDING, study skills, and a mindset necessary to succeed after high school. It will involve a brief review of Advanced Algebra but is not intended as a remedial course. The student will be introduced quickly to the subjects of limits, derivatives and integrals. Additionally, the course includes a component of EXCEL spreadsheet programming that will introduce them to programming logic and provide them a practical tool to use on mathematic, business and engineering problems.

COURSE REQUIREMENTS

1. Students are expected to self-govern by doing as many problems as necessary from a syllabus to prepare themselves for a daily quiz that will test their understanding. There is no formal homework to turn in.
2. Students are expected to participate in class discussions and work problems on the board to help their fellow classmates understand the principles taught in each night's homework.
3. Tests and class projects using Excel spreadsheets will be listed on a syllabus.

SUPPLIES

Also consult Grade Level Supply List.

- *Calculus with Analytic Geometry*, Fifth Edition by Earl W. Swokowski
- Engineering paper (with gridlines) is suggested for neatness, but really any paper is fine.
- Laptop or tablet computer with Microsoft EXCEL.
- Some type of calculator, preferably graphing, but something other than your phone.
- Book cover
- Some sort of notebook to organize homework, quizzes and notes

GRADING

Taking any class at MCA as a senior involves RISK. Failure to master a class will prevent the student from graduating. No option is available to take the class over the next year. As a senior, there is no “next year.” Students should therefore enter Calculus with a desire to work hard and finish well. If a student wishes to exercise the cultural norm of coasting toward graduation their senior year, Calculus may not be the senior elective to choose.

As in all MCA classes, Mastery (M) requires obtaining 85% of the total points available for the class.

Grading consists of two components weighted at 70% and 30%:

Project Grade (70%)

Each student’s project grade is determined by:

1. Daily Homework Quizzes (5-10 pts Daily, MAY NOT BE REVISED)

There will be a daily quiz over one or two problems from any problem in the homework at the beginning of each class. Homework problems are listed on the course syllabus.

Homework is not required to be turned in* and will not receive a grade. Students are expected to do as many of the homework problems on the syllabus as necessary to understand each assignment. This may mean doing every problem or it may mean doing every fourth problem or it may mean simply looking at the examples in the book and understanding them. An ANSWER KEY with all problems (even and odd) is provided to the students to aid in their understanding of the homework. Often the answers show only minimal work. The student will have to work the problems and refer to the answer key for feedback on whether they did them correctly.

*If a student fails to consistently master these daily quizzes, that student will begin to be required to turn in homework problems to achieve understanding, which may or may not be graded. This requirement will be eliminated if a student’s daily quiz grades improve.

2. Major Exam Grades (100-200 pts Per Test)

There will be 10 exams throughout the year, approximately one every 2-3 weeks.

3. Project Grades on special projects throughout the year (mostly worksheets and EXCEL spreadsheets -- Points to be Determined)
4. Revisions on Special Projects and Major Exams (Points Depend on Initial Score, See Below)

A student is never required to revise anything. However, without revision points, it is usually difficult to pass the class. In addition, opportunity to understand errors and correct them in the future is lost.

Special Projects may be revised up to 70% of the points lost. Revisions are only counted if turned in within one month of the due date. Exams may be revised according to the following schedule:

<u>Original Exam Score</u>	<u>Percent earned through revision</u>	<u>Revised Score Range</u>
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60.0%-69.9%	55%	82.0%-87.0%
70.0%-79.9%	60%	88.0%-92.0%
80.0%-89.9%	65%	93.0%-96.5%
90.0%-99.9%	70%	97.0%-99.9%

It should be obvious that it is advantageous for the student to do as well on the initial exam as possible to revise to the highest possible score. No revisions are allowed unless an initial score of 60% is achieved.

Class Contribution Grade (30% Of Total Grade, Approximately 10 Points Daily)

The same daily quizzes over the homework will also contribute to the class contribution grade to objectively measure class preparedness. Class contribution will also be objectively graded by asking students randomly to go to the board and work problems. Contribution will be subjectively measured by how engaged the student is in the class by their questions, comments and general attention. Class contribution will be graded severely if anyone uses a cell phone in class. Parents may call the tutor's cell phone or the office if there is an emergency. Cell phones will be placed in a basket to start class.

Contribution Grades

Contribution Grades primarily assesses four areas: a student's preparation for class, his attitude towards learning, his contribution towards learning during class-time, and his level of engagement during the class conversation.

A student's respectfulness towards God, his tutor, and peers is a prerequisite for a good Contribution Grade.

Daily Contribution grades will be given for every hour of class. Typically, students are expected to earn 10 points per hour, but the tutor may adjust these values to better reflect the nature of the class time. Daily Contribution grades are not revisable.

Additional Contribution Grades such as Grammar Quizzes, Engagement Notes, etc. may be assigned as needed. All additional Contribution Grades are revisable for 70% of the original value, unless the tutor specifies otherwise.

EXTRA CREDIT

Additional points may be earned through the completion of extra credit assignment or special projects. These will require a special request to the tutor and may differ according to student. Assignments may involve additional homework, research or an in-class presentation. Special projects will allow the students to explore an area of interest more deeply with the purpose of sharing or demonstrating insights to the rest of the class.

MASTERY WITH HONORS (MH)

(MH for fall semester) is obtained by the student achieving above 92.5% of the total points available and by completing a service-oriented class project sometime during the year. Students may initiate their own project idea or build upon suggestions offered by the tutors or classroom assistants.

CLASS TIME

Class time will be spent working practical problems from the textbook and discussing the concepts addressed. Students are encouraged to work together to understand homework problems, but all students are expected to do their own work.

TUTOR HOURS

As a part-time tutor, I will attempt to be at school 15-30 minutes before class and stay 15-30 minutes after class. Students may text me or email me for additional help. I am available on all days early at MCA and, upon arrangement beforehand, can meet them in the Resource Center from the time the school opens until roughly 8:00 am. I am available almost anytime during the day as well if the student can meet me at Crownquest's office at 18 Desta Drive. If these times are not sufficient, other times might be arranged, depending on the circumstances. Parents and students are invited to communicate with me frequently via phone, e-mail, text, office visit or lunch. E-mail or text is the most convenient for my schedule. I am literally connected to a computer for 10 or more hours during the day, so I can respond to your inquiries almost immediately.

TARDY POLICY

Since we routinely use the entire class time for instruction and we start by answering a couple of student questions about the previous night's homework prior to the daily quiz, arriving on time to class promotes success. Tardies will lower your contribution grade for that day.

FIRST DAY ASSIGNMENT

There is no first day assignment due. If the student wants to get ahead, Chapter 1.1, 1.2 and 1.3 of the textbook is a review of Algebra and Trigonometry that is VERY important to success in Calculus. Initial class periods will be spent gauging where the students are in their Algebra and Trig skills and creating a graphing spreadsheet in EXCEL. There will be a test over Algebra and Trig very early in the semester. Problems on the test will come from problems in Chapters 1.1, 1.2 and 1.3.

TURNITIN POLICY

Turnitin is an internet-based service and tool that promotes academic integrity and original thought from students. Turnitin screens for similarity (plagiarism) and detects unauthorized A.I. usage in writing.

To better ensure academic integrity and original thought, tutors may ask students to either submit their classwork through Turnitin directly or to email them a digital copy of their classwork, for the tutor to upload through Turnitin screenings.

Tutors may use the feedback Turnitin provides to help them make a more informed determination about the integrity and originality of the student's work.

MCA Schoolwide Policies

MCA ATTENDANCE POLICY

Absence: Parents must inform the school if their student will be absent for any reason. Call the Front Office or email upperschoolnurse@mcaknights.org prior to the absence or on the morning of the absence. If a student is absent without prior notification by a parent, the school will call the parent to determine the validity of the absence. Call the office, 432-694-0995, or email upperschoolnurse@mcaknights.org.

In the event an Upper School student is absent for more than one-fourth (1/4) of the class sessions during a semester, the student's parents must meet with the tutor and Head Administrator to determine whether the student will receive credit for the class. Additional and/or make-up work may be required.

Tardy Policy: Tardies will be marked at the discretion of the individual tutors. Students or parents should contact the individual tutors to report reasons for tardies as soon as possible.

Missed Assignment Due Date Guidelines: In the event of an absence, a due date extension will be given. The extension will not exceed the number of school days missed during the absence. Due dates will be established by the class tutor. Students must complete all work assigned during their absence. However, the tutors may, at their discretion, excuse the students from any portion of the assignments missed. Students will receive full credit for submitting assigned work. Note: It is the **student's responsibility** to find out what work was assigned. In the case of extended illness, it is recommended that the student or parents contact the tutors directly to find out what assignments were or will be missed.

MCA HONESTY POLICY

All students are assumed to be exhibiting the godly fruit of self-control. We anticipate working with students who are characterized by joy, honesty, and diligence. For this reason, upon enrollment, we require that each student affirm that he or she will maintain the highest standards of honesty and behavior in all work done for Midland Classical Academy. All students will be asked to sign the following.

Pledge of Academic Honesty

I have read and understand the Midland Classical Academy Code of Conduct. I pledge my honor, with God as my witness, to commit myself to the practice and preservation of these standards of academic honesty as long as I am a student of the academy.

As such, the following actions are considered serious violations of our Honesty Policy.

- 1. Directly copying someone else's work visually, orally, electronically, or otherwise.*
- 2. Use of disallowed devices on assignments such as notes, smartphones, books, etc.*
- 3. Getting test questions or essential information from another student who has already completed an assignment that will later be taken, such as a test or quiz.*
- 4. Any other activity that the tutor has explicitly described as cheating.*

MCA MASTERY WITH HONORS (MH)

Midland Classical Academy offers honors credit, referred to as “Mastery with Honor”, but we offer no “honors” classes.

Mastery with Honor credit for a class is given to those students who

- receive a minimum grade of 92.5 at the end of each semester
- receive a minimum participation grade of 85 at the end of each semester
- demonstrate character befitting an honor student (1 Corinthians 10:31)
- complete a tutor-approved, 20+ hour project that advances the student’s knowledge or skills in the subject while serving either the school or the community in some capacity.

As a student fulfills these requirements in a class at MCA, they receive a Mastery with Honor designated by an “MH” for the class. Mastery with Honor applications and a nominal fee are due at the end of October. The projects themselves are due at the end of March with two scheduled checkpoints in between the application and final deadline.

ARTIFICIAL INTELLIGENCE (A.I.) POLICY

Artificial Intelligence programs are tools that can be used beneficially or harmfully. To the extent that MCA uses these A.I. tools, we desire to use them and instruct our students to use them beneficially. It requires the classical virtue of “Wisdom” to discern the difference between what is beneficial and what is harmful.

Among MCA’s core values is “Engaging Minds”. Everything we do, including our use of A.I. needs to be in harmony with this value and to cultivate within students the skill of being able to “think for themselves”.

MCA offers the following principles for tutors & students to follow as they navigate A.I. in their academic domains. MCA tutors will create and clearly communicate their own instructions for A.I. usage in their classrooms and for their assignments. Students should practice integrity, honesty, and humility in their use of A.I. as in all their work.

Principle 1: *Why to use A.I.* - A.I. should only be used by a student to equip them to better understand the material and to learn in a way that facilitates their critical thinking skills.

Principle 2: *When to use A.I.* - Tutors will explicitly and clearly communicate which assignments a student may or may not use A.I. tools to assist in their learning.

Principle 3: *How to use A.I.* - Tutors will explicitly and clearly communicate the method in which it is acceptable and not acceptable for the student to use A.I. tools.