



Lake Tahoe Community College
DrLarryGreen@gmail.com or GreenL@ltcc.edu

COURSE NAME: Calculus + SUPPORT COURSE

UNITS: MAIN COURSE NAME (5 quarter units) + SUPPORT COURSE NAME (2 quarter units)

REGISTRATION: Student enroll in the calculus class, and can also enroll in the support class.

PLACEMENT: For this year students still receive placement into one of our 2 precalculus courses or into calculus. Counselors have been told to waive the prerequisite for anyone who requests to begin in calculus. Starting Fall 25 all students had access to calculus. Approximately one-third of this quarter's students had not taken precalculus before.

SCHEDULE: Calculus meets every Monday, Wednesday, and Friday for around 1.5 hours each meeting. The support course meets every Monday and Wednesday for an hour each day, either an hour before the calculus class or an hour after the class.

TEXTBOOK: Learnvia System
(<https://docs.google.com/document/d/1ahsTvjmKrietThsp9nTg226b2ZSuvARmisfNrvzKtbU/edit?tab=t.0>) was used last quarter (Otherwise we use a remixed interactive and multimedia version of the OpenStax textbook:
[https://math.libretexts.org/Courses/Lake Tahoe Community College/Interactive Calculus Q1](https://math.libretexts.org/Courses/Lake_Tahoe_Community_College/Interactive_Calculus_Q1) along with MyOpenMath.)

COURSE MANAGEMENT SYSTEM: The course has a single Canvas course for students, although the 901 course content sends students into that course shell to access the assignment for ease of grading. We use Canvas which is LTI into Learnvia or MyOpenMath

GRADING:

Learnvia Activities:150 points
In Class Quizzes (50% for putting their name on it:150 Points
Exam 1:.....125 points
Exam 2:.....125 points
Exam 3:.....125 points
Team Presentation of Calc Application:100 points

Final Exam (cumulative:.....225 points

ACTIVE LEARNING: This is a flipped class where the students interact with Learnvia at home and do exercises and quizzes. In class there is a short quiz, then a short application video from a course that is not mathematics but used the relevant calculus, then the students work in groups on handouts.

GROWTH MINDSET: Students are told that this class is all about learning and improving as time goes on. There is a lot of groupwork and since it is a flipped classroom they get individual help throughout the class so that they can always get individual help and feedback. The quizzes and homework are mostly formative assignments, so that they can prepare ahead of time for the exams.

EXAMPLE ASSIGNMENT: Learnvia has an AI assistant that they can ask throughout the assignment. It starts with a one- or two-minute video that pauses every 30 or so seconds and asks the student a relevant question. Then they go through step-by-step math questions where they can receive a hint, get help and feedback. Finally, they do similar problems that they have to do without the assistance of AI.

OTHER COURSE ELEMENTS: They have a group project where they work together as a team of two or three on a relevant application of calculus. Finally they give a ten-minute presentation to the whole class where they present the project via computer slides and full explanation and at the end there is a Q&A where their classmates ask questions.

Grading in MAT 106:

- When they work on the Learnvia system, they are graded on their participation, their work and there is also a full AI system that grades written work. For example, it could ask them to determine where the function $f(x) = 2x^3 + 9x^2 + 12x - 6$ is increasing and where it is decreasing and explain their reasoning. They then give the answer and a few sentences on how they arrived at their answer. Learnvia has a built in AI system that can read their full explanation and provide feedback on their explanation.

Grading in MATH-151:

- For the support course, they are graded mostly on attendance and their effort. They are also required to work with a tutor every week.

Typical Class Day:

- Before every class:
 - Students watch Learnvia videos and go through the AI assisted learning process.
 - There is Learnvia Graded exercises and quizzes.
- Class begins with a short quiz that is very similar to what they did with Learnvia. After the quiz is over, the instructor goes over the solution.
- Then there is the application video.
- Next is a Q&A where they can ask any questions they have about the class or about the calculus content

- Then they work together in groups on a handout that includes exercises that are relevant to the content. There are also exercises where they have to come up with their own relevant calculus question and give it to their classmate to solve.
- After Class:
There is an embedded tutor in the class who know what is occurring at that time. Student come to the library where the embedded tutor works and get help from the tutor. Also, their instructor has student hours each day when the student can come to the instructor's office for help.