

**Wayland Mission Statement:** Wayland Baptist University exists to educate students in an academically challenging, learning-focused and distinctively Christian environment for professional success and service to God and human kind.



## Calculus I

### WBU Online Spring 2 2022

MATH 2406 – VC01

#### Instructor:

Dr. Chris Thornhill

**Email:** [thornhillc@wbu.edu](mailto:thornhillc@wbu.edu) (preferred method of contact)

**Office Phone:** 806-291-1131

#### Course Description:

**Description:** This course develops skills in transcendental functions, limits, derivatives, applications of derivatives, integration, differential equations, and the Fundamental Theorem of Calculus.

**Prerequisites:** MATH 1305 or equivalent

#### Required Resources:

**WebAssign Access:** Webassign Access – This will be automatically provided for all students via VitalSource. Instructions will be provided in Blackboard. The textbook is available through this access.

**Supplies:** All students need to have a scientific calculator that has at least log x, ln x, and the exponential function ( $e^x$ )

#### Optional Resource:

**Textbook (hard copy):** *Calculus, Early Transcendentals* 8<sup>th</sup> edition, Stewart, ISBN 978-1285741550.

**NOTE: The hard copy of the textbook is optional. You will have automatic access to the online copy of the textbook.**

#### Assessment of Student Achievement:

There are four components to student evaluation in this course.

1. **Lecture Videos and Practice Problems:** You will need to watch the videos presented in the learning modules for this course and try the practice problems that follow most of the videos. These are tools for introducing you to the material and having that material as a reference for study. Please do not neglect either the videos or the practice problems.
2. **Homework Exercises:** You have homework exercises that must be completed for each section that we cover in the course. You will complete those online through Webassign. Instructions for registering in and using Webassign are included on Blackboard.
3. **Weekly Quizzes:** By the end of each week of the course you will be required to complete an online quiz covering the sections from that week. The deadline for completing this quiz will be midnight on Sunday. You can take the quiz up to *three times* and your highest score will be counted. Each time you take the quiz, the questions could be randomly generated, but of the same type.
4. **Exams:** During the course, there will be two major exams: a Midterm and a Final. Each test will cover approximately half of the course. Both of these tests are to be taken **in person** at one of the external campuses or a testing center. They will be paper and pencil tests which will be sent to your instructor for grading. They must be **proctored** by an approved representative of the University.

## Assessment of Student Achievement: (cont.)

Practice Problems .....	5%				
Homework .....	15%				
Weekly Quizzes .....	20%				
Exams .....	60%				
A: 90 – 100*	B: 80 – 89*	C: 70 – 79*	D: 60 – 69	F: Below 60	

\*In order to receive a grade of C or higher, in addition to getting an overall grade of 70% or better in the course, one must also receive a passing grade of 60% or better on at least one of the two exams taken. If a student fails both exams, the highest possible grade that can be earned (by having high homework and quiz scores, for instance) is a D.

Students shall have protection through orderly procedures against prejudices or capricious academic evaluation. A student who believes that he or she has not been held to realistic academic standards, just evaluation procedures, or appropriate grading, may appeal the final grade given in the course by using the student grade appeal process described in the Academic Catalog. Appeals may not be made for advanced placement examinations or course bypass examinations. Appeals are limited to the final course grade, which may be upheld, raised, or lowered at any stage of the appeal process. Any recommendation to lower a course grade must be submitted through the Executive Vice President/Provost to the Faculty Assembly Grade Appeals Committee for review and approval. The Faculty Assembly Grade Appeals Committee may instruct that the course grade be upheld, raised, or lowered to a more proper evaluation.

## Course Outline/Outcome Competencies:

Upon successful completion of this course...

1. The student will be able to manipulate transcendental functions and use them to mathematically model applications.
2. The student will be able to understand and work with limits and continuity and apply them to tangent and velocity problems.
3. The student will be able to find derivatives of several types of functions using both the definition and differentiation rules including the chain rule; and be able to interpret the derivative as a rate of change.
4. The student will be able to apply derivatives in various ways including optimization, graphing, l'Hospital's Rule, and the Mean Value Theorem.
5. The student will be able to perform problems involving antiderivatives and integrals including definite and indefinite integration, interpreting the definite integral as an area, the Fundamental Theorem of Calculus, and the substitution rule.

**Statement on Plagiarism and Academic Dishonesty:** Wayland Baptist University observes a zero tolerance policy regarding academic dishonesty. Per university policy as described in the academic catalog, all cases of academic dishonesty will be reported and second offenses will result in suspension from the university.

**Disability Statement:** In compliance with the Americans with Disabilities Act of 1990 (ADA), it is the policy of Wayland Baptist University that no otherwise qualified person with a disability be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the university. The Coordinator of Counseling Services serves as the coordinator of students with a disability and should be contacted concerning accommodation requests at (806) 291-3765. Documentation of a disability must accompany any request for accommodations.

“...But sanctify Christ as Lord in your hearts, always *being* ready to make a defense to everyone who asks you to give an account for the hope that is in you, yet with gentleness and reverence...”

1 Peter 3:15 (NASB)

## Course Schedule (All times are for the Central Time Zone, so plan accordingly)

### Week 1: March 14 – March 20

Videos and Practice for Sections 2.1 – 2.3  
Homework Exercises 2.1 – 2.3  
Weekly Quiz covering Sections 2.1 – 2.3  
**Due by Sunday at 11:59 p.m., March 20.**

### Week 2: March 21 – March 27

Videos and Practice for Sections 2.5 – 2.8  
Homework Exercises 2.5 – 2.8  
Weekly Quiz covering 2.5 – 2.8  
**Due by Sunday at 11:59 p.m., March 27.**

### Week 3: March 28 – April 3

Videos and Practice for Sections 3.1 – 3.4  
Homework Exercises 3.1 – 3.4  
Weekly Quiz covering 3.1 – 3.4  
**Due by Sunday at 11:59 p.m., April 3.**

### Week 4: April 4 – April 10

Videos and Practice for Sections 3.5, 3.6, 3.9, 3.10  
Homework Exercises 3.5, 3.6, 3.9, 3.10  
Weekly Quiz covering 3.5, 3.6, 3.9, 3.10  
**Due by Sunday at 11:59 p.m., April 10.**

**Midterm Exam During Week 5: (Proctored)  
(Covers Material from Weeks 1-4)**

**This needs to be completed by April 16.**

### Week 5: April 11 – April 17

Videos and Practice for Sections 4.1 – 4.4  
Homework Exercises 4.1 – 4.4  
Weekly Quiz covering 4.1 – 4.4  
**Due by Monday at 11:59 p.m., April 18.**

### Week 6: April 18 – April 24

Videos and Practice for Sections 4.7, 4.9, 5.1, 5.2  
Homework Exercises 4.7, 4.9, 5.1, 5.2  
Weekly Quiz covering 4.7, 4.9, 5.1, 5.2  
**Due by Sunday at 11:59 p.m., April 24.**

### Week 7: April 25 – May 1

Videos and Practice for Sections 5.3 – 5.5  
Homework Exercises 5.3 – 5.5  
Weekly Quiz covering 5.3 – 5.5  
**Due by Sunday at 11:59 p.m., May 1.**

### Week 8: May 2 – May 7

Review for Final  
No assignments

**Final Exam During Week 8: (Proctored)  
(Covers Material from Weeks 5-7)**

**This needs to be completed by May 7.**

The School of Mathematics and Sciences emphasizes a rigorous, ethical approach to the study of mathematics and science. We believe that success in these disciplines requires a broad base of content knowledge and the development of the critical thinking skills necessary for the ongoing acquisition, processing and communication of current subject matter. The activities of the School, both academic and professional, intentionally reflect the Lordship of Jesus Christ and His centrality to all of creation.

**Academic Honesty:** Disciplinary action for academic misconduct is the responsibility of the faculty member assigned to this course. The faculty member is charged with assessing the gravity of any case of academic dishonesty, and with giving sanctions to any student involved.

## Important Details

Here are a few VERY important details that you should make note of as you prepare to get the course underway:

1. The majority of the coursework – the homework and quizzes – will not be in Blackboard but instead at Webassign. However, your course on the Webassign site will be linked through your Blackboard account so that you do not have to log in to a separate website. Directions for registering for Webassign are provided on Blackboard, and you will always login to Webassign through Blackboard. To log in to Blackboard, go to <http://wbu.blackboard.com>.

You need to set up your student account at Webassign before you begin any work in the course. You should have direct access available to you online through VitalSource. Instructions for this will be given in Blackboard.

2. As part of this course, you will watch the series of lecture videos and work out practice problems following the videos. The videos and problems are on the Blackboard site. You will definitely need a broadband internet

connection if you expect to watch the videos online.

3. Following are the standard instructions for taking exams in this course.

You will need a proctor for the midterm and the final, which will both be pencil and paper exams (NOT ONLINE), taken in person.

If you live in a city with a Wayland campus, you must take the tests on that campus, so you do not need to submit a proctor request form. However, you should contact the campus the week before your test to arrange a date and time for you to take the test, to find out where the test will be administered, and to give them the course number (MATH2406 **VC01**) and instructor name (Dr. Thornhill).

For the Plainview campus, contact the WBU Online offices at 800-203-9048.

For external campuses, see the listing at [this page](#) for contact information. If you cannot take the tests on a Wayland campus, you must have your proctor approved by Wayland before they can administer the tests. The proctor must be approved every term (but only once per term) even if they have proctored tests for Wayland in past terms. Commonly used proctors are librarians holding a Master of Library Sciences, authorized employees at U.S. Military Education centers, and college testing centers (like Sylvan Learning). See the proctor request form for more details. For tips on finding a proctor, go to [this link](#).

The proctor request form is located at [this page](#). Once the form is filled out, the proctor will receive an email requesting they provide certain information for verification. When the information has been provided, the Virtual Campus will approve or deny the request and will notify both the student and the proctor by email. **This entire process must be completed at least a week before the Midterm.** Do not forget to contact the proctor the week before the test to arrange a date and time and location (and to let them know the course number and instructor name).