



Math 1400-910 Calculus I Online Summer I 2022

Monday May 23 – Wednesday June 29th

Professor: Nakia Rimmer MA, MS

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Office Hours: By appointment

Course objective: This class has a mixture of

- a) synchronous class organized active learning activities where students can ask questions about the homework and course material
- b) asynchronous delivery of the course material using video. This course covers the same material (applications and techniques of integration, sequences, series and differential equations) as the regular Math 104 class that is offered in the fall or spring in the traditional face to face manner. The main difference is that we offer you the opportunity to take the course online in the summer. Although the course is titled Calculus I, it is actually a second semester calculus course (**Calculus II**). It is for students that know limits, derivatives, and beginning integration (up to u-substitution).

Class: Class will meet 4 times per week for 2 hours each session. The time will be from 5:15-7:25 pm. Eastern Standard Time (EST) Mondays - Thursdays. If you will be in a different time zone, you just have to adjust for the time difference.

The class sessions will be in two different formats: a) an active lecture format and b) office hour/recitation format where students get to ask questions on the material. We will use [Zoom](#). You will hear my voice and see me simultaneously. I teach with the aid of a digital tablet program to serve as a whiteboard. I will use the whiteboard to work out problems with you. There will be a chat feature in Zoom that will be used simultaneously with the other features. I will monitor the chat, answer any questions that students might have regarding the active learning activity. If you have a microphone and desire to ask or answer a question, I can have a two-way conversation with you that the entire class can hear. A video capture of the class meeting will be recorded and archived for you to watch whenever.

Class Webpage: The class webpage will be kept on the Canvas learning management system. All registered students will have access to the site starting the weekend before class begins.

Text: This class will not use a traditional text. Consider my notes and the course videos to be the text.

Optional Supplemental Text: *Calculus II Workbook*, N. Rimmer.

ISBN 978-1-7324159-0-4. Available in the Penn bookstore, online through LuLu.com

<https://tinyurl.com/y792haw6> or can be purchased directly from me.

See the first part of the workbook on Google book search <https://tinyurl.com/y77el7mt>

Attendance: Your attendance is not required during the 5:15-7:25 timeslot, but it is **highly recommended**. During that time you will have the concepts and problem solving techniques reinforced by working on organized activities. All traditional lecture material will be delivered asynchronously (via video). There will be quizzes given twice a week at the end of every other class. Attendance at these quizzes is mandatory and not negotiable, they will be proctored on Zoom (see the quiz section for more detail).

Grade Calculation Formula	
Practice Problems	8%
Quizzes	72%
Final Exam	20%

Practice Problems: 8% of your course grade

2 Practice Problems per regular quiz will be given on Canvas. Each pair will account for 1% of your grade. You will upload your work to a dropbox. Think of these as practice quizzes.

Quizzes: 72% of your course grade

We will have 8 quizzes on Canvas (each will account for 9% of your course grade). These quizzes will have 4 questions and will cover 2-3 topics. They will be graded for correctness and completeness. You'll have to turn in your work (in a dropbox on Canvas as a single PDF file) for partial credit. **Quizzes are live proctored** remotely using Zoom. Students must be on Zoom with their cameras on and sound muted. From the moment you start the quiz, you will have a 40 minute window to enter answers. You will have a 10 minute window to digitize your work and submit it (in a dropbox on Canvas as a single PDF file) for partial credit. This system will be in place for both the quizzes and the final. The document created and uploaded must be a single pdf file. An excellent free smartphone app that will take a batch of pictures and turn it into a multipage pdf file quickly is called CamScanner. Pictures must be clear (readable, not blurry) and rotated so that they are upright. Be careful not to upload the wrong document or only the first page of the document, it's very important that you look at the document you upload. Any document that is incomplete or not associated with the quiz will be graded as 0. Any document that is uploaded after the 10 minute window will be docked 1 point for every minute it is late so be sure that you have the process of digitizing and uploading down. After 4 quizzes we offer the opportunity to replace the lowest of those 4 quizzes by giving a Redo Quiz. If you score lower on that or if you chose not to take that, then your grade will not be affected. **There will be no makeup quizzes.**

Final Exam: 20% of your course grade

There will be a comprehensive cumulative final exam given on the last day of the course that will have 8 questions (think of it as two quizzes). You will have 80 minutes to answer the data entry questions and write up your work for them. We will give you a 10-15 minute window to digitize and upload your work. See the quiz section above for the policies governing the final.

Calculators: You are not permitted to use a calculator or computer algebra system on quizzes or exams. If you are caught doing so, it will be reported to OSC and your grade for the exam will be 0.

Get Help : Before it's too late, please seek out help. One definition of too late is after you receive a low quiz 1 score. The hardest part of the course is keeping up with the pace. We cover 15 weeks of material in 5.5 weeks. Each class meeting will cover about two sections of material. If you miss a class and don't get a chance watch the archived video before the next class, then you will find it hard to catch up. Each section builds off of the previous one so waiting until the weekend to catch up might be impractical. Be sure to ask lots of questions.

Are you ready?

This is not a first semester calculus class like its name suggests. This shouldn't be the first calculus course you have ever taken. This is a second semester calculus course, it starts with integration applications and techniques. So you need to have a good grasp of integration (what it is, how to use the Fundamental Theorem of Calculus, and how to use substitution) before the class starts. You also need

to know how to find limits and derivatives. If you find that you are weak in some areas but are willing to work hard to overcome it, then I recommend staying in the course and giving it your all.

Material Covered in Math 1400:

Week 1	Functions and Exponents	A
	Taylor Series	B
	Convergence and Expansion Points	C
	Limits	D
	L'Hopital's Rule	E
	Orders of Growth and Big-O Notation	F
Week 2	Derivatives and Differentiation Rules	G
	Linearization and Optimization	H
	Indefinite Integrals	I
	ODEs	J
	Substitution	K
	Integration by Parts	L
Week 3	Trig Substitution	M
	Partial Fractions	N
	Definite Integrals	O
	Fundamental Theorem of Calculus	P
	Improper Integrals	Q
	Other Trigonometric Integrals	R
Week 4	Volume	S
	Advanced Volume	T
	Arc Length and Surface Area	U
	Probability	V
	Expectation and Variance	W
	Sequences	X
Week 5	Infinite Series; nth Term Divergence Test	Y
	Integral and Comparison Tests	Z
	Ratio and Root Tests	AA
	Alternating Series, Conditional Convergence, Power Series	BB
	Taylor Series Revisited	CC
	Series Approximation and Truncation	DD

	Covers
Quiz 1	A, B C
Quiz 2	D, E, F
Quiz 3	G, H, I
Quiz 4	J, K, L
Redo Quiz 1	A through O
Quiz 5	P, Q, R
Quiz 6	S, T, U
Quiz 7	V, W, X
Quiz 8	Y, Z, AA
Redo Quiz 2	P through DD
Final Exam	A through DD

Important Dates

	Summer Session I
Course registration begins	April 18
Open enrollment form deadline	May 9
Classes begin	May 23
No classes, University holiday	May 30 June 20
Last day to add a course/drop a course with no financial obligation	May 31
Last day to drop a course with 50% financial obligation Students must contact their home school by the deadline to have the course dropped and the money refunded. (LPS students must submit a Late Drop Form .)	June 8
Last day to change grade status Please see contacts for home school for more information. (LPS students must complete a Grade Type Change Webform)	June 8
Last day to withdraw from a course Full financial obligation will apply. Transcript to read "W." Please see contacts in home school for more information. (LPS students must complete a Withdrawal Form)	June 22
Classes end*	June 29

MATH 104 Online Schedule:

Monday	Tuesday	Wednesday	Thursday
23	24	25	26
A	D	E	G
B		F	
C	Quiz 1		Quiz 2
	31	1	2
	H	J	K
	I		L
		Quiz 3	
6	7	8	9
M	N	P	Q
	O		R
Quiz 4		Redo Quiz 1	
13	14	15	16
S	T	V	W
	U		X
Quiz 5		Quiz 6	
20	21	22	23
Y	Z	BB	CC
	AA		DD
Quiz 7		Quiz 8	
27	28	29	
		Final Exam	
Redo Quiz 2			

If you have any questions regarding the course, email Professor Rimmer at rimmer@math.upenn.edu