

Syllabus

MTH 253 Calculus III

Alex Jordan

Spring 2022

1 Basic Needs Statement

PCC wants you to be successful and have the resources that you need. If you face challenges affording food or housing, or if you need access to technology, this will naturally affect your classwork. Check out these resources: [Student COVID-19 Resources](#)¹ and [Emergency Funds](#)². You can also contact a campus Student Conduct and Retention Coordinator at conductandcare@pcc.edu.

2 Contact Information

To reach me or PCC:

Instructor: Alex Jordan

Office: CA SSB 317 when PCC opens
(Use email and D2L to contact me.)

Phone: 971-722-4138

(Not a good way to reach me this term.)

email: alex.jordan@pcc.edu

Portland Community College

Cascade Campus

705 N Killingsworth St.

Portland, OR 97217

Because of federal privacy laws, all email communications related to this class need to be sent to and from your @pcc.edu email address.

CRN	Days	Time	Place	Final Exam
22468	M/W	9:00–11:20	Remote	Monday 6/13/2022 9:00–11:00

I have drop-in office hours where you do not need to make an appointment—just come by! Use the link to a dedicated Zoom room that you will find in D2L on our course homepage under my picture.

Office Hours	
Monday	3:00–4:20
Wednesday	3:00–4:20

If those times are not workable for you, please feel comfortable contacting me to make some other arrangements.

¹www.pcc.edu/coronavirus/information-for-students/resources

²www.pcc.edu/enroll/paying-for-college/emergency-funds.html

3 Course Description

Taken from the official PCC course description:

Number	MTH 253
Title	Calculus III
Credit Hours	5
Lecture Hours	50

Includes topics and applications in infinite sequences and series (including Taylor series) and an introduction to differential equations and modeling. Graphing and Computer Algebra System (CAS) technology are used, such as Desmos and/or GeoGebra which are available at no cost. The PCC math department recommends that students take math courses in consecutive terms. Prerequisites: MTH 252 and (WR 115 and RD 115) or IRW 115 or equivalent placement. Audit available.

The complete Course Content and Outcome Guide can be found at www.pcc.edu/ccog/.

4 Expectations

This term we are still managing many courses remotely because of the covid-19 pandemic. This section is being administered remotely.

We all have extra responsibilities this term. As the instructor, I need to use new ways to deliver the course to you at home. I need to be creative and flexible with how we use technology. And you, the student, need to have self-discipline and complete the assignments that I ask of you. And also to be brave and bring your concerns and questions to me as soon as you can.

We can boil down your responsibilities to the following list.

- Attend the live sessions we will have in Zoom.
- If you have to miss all or part of a class session, find time to watch the recording.
- Collaborate with your classmates when it is appropriate during our live sessions. When needed, continue to collaborate with your classmates outside of class.
- Complete assignments by their due dates. Work on assignments early so you have time to seek help whenever that is needed.
- Read sections of the [textbook](#)¹ ahead of class. If it suits your learning style, watch the videos there as well.
- Use all the tools available to you to communicate with me about your concerns and your questions.
 - Direct Email
 - D2L Discussion Posts (can be posted anonymously)
 - Raising issues during the Zoom sessions
 - Schedule one-on-one Zoom meeting with me

¹opentext.uleth.ca/apex-video/apex-calculus.html

5 Technology Requirements

Since we are in a remote teaching mode, it is essential that you have access to a computer, laptop, tablet, or at the very least a smart phone, with internet access.

To attend the live class sessions, your device needs to work with Zoom.

There are other elements of the course where you simply need a modern web browser.

- accessing content in D2L
- reading the web version of the textbook
- homework and quizzes with WeBWorK
- accessing GeoGebra for computer-assisted calculations and graphing

6 Textbook

We are using a *free* textbook called *APEX Calculus*, written by Greg Hartman.

Access this book:

- as a free HTML book at opentext.uleth.ca/apex-video/apex-calculus.html¹.
- in various PDF forms at www.apexcalculus.com/.
- for purchase from the PCC book store for \$16.00.

Please note that there are some differences in the content between the HTML version of the book and the PDFs or printed copies. These differences are not important, but you may notice them if you use both versions to study.

7 Grades

General PCC Grading Guidelines are found at catalog.pcc.edu/handbook/g301-gradingguidelines.

Attendance/Engagement. Attending and participating in the Zoom class sessions is a small factor in calculating your final grade. Collectively, these sessions are worth 4% of your final grade.

If you miss a class session, you can still recover that part of your grade. All that you need to do is watch the class recording. Send me a message confirming that you did this, and I will update the record in D2L. In your message, please include the specific date of the class recording that you watched.

Online Homework. You have online homework for each section using WeBWorK. See [WeBWorK Assignments](#) for details. The due date for each assignment is posted in WeBWorK. It will always be Sunday evening at 10:00PM. Usually, more than one section will be due at the same time. You should start working on these exercises soon after the corresponding class session

Collectively, all the online homework is worth 18% of your final grade.

After a due date, you may still work on the online homework and submit answers for 95% credit.

¹opentext.uleth.ca/apex-video/apex-calculus.html

Discussion Posts. Each week you will make a graded discussion post in D2L, responding to some topic that is posted. Collectively, these are worth 10% of your grade.

When you make a post, I will give you private feedback and a score from 0 to 3. If you score less than 3, you are invited to continue adding to your discussion thread, improving your response. I will update your score and send you new private feedback. Eventually, you should reach a score of 3/3 on each discussion topic. Here is a rubric that I use to determine your score with each post:

3 points	Post is correct, relevant, well-written, and pertains to the appropriate module and textbook sections. Post contains proper spelling, punctuation and grammar. Post contains proper mathematical notation and vocabulary.
2 points	Post would be worth 3 points, but has one of the following issues: <ul style="list-style-type: none">• mostly correct, but not entirely correct• noteworthy spelling, punctuation, grammar issues• does not use mathematical notation and vocabulary correctly• does not use equation editor where appropriate
1 point	Post needs significant editing or revision. May have more than one of the issues listed for 2 points. Or it may only have a kernel of correctness but is mostly incorrect.
0 points	Post does not contain any correct work. Or post is not related to the correct topic.

The “due dates” for these weekly discussions are Sunday at 10:00PM. This is purely advisory to help you stay on track. If you post late, or improve your initial post later than the “due date”, it does not hurt your grade (up to the weekend before final exams).

Written Assignments. Each week you have an assignment of exercises to write up, scan, and turn in through D2L.

Collectively, these assignments are worth 18% of your grade.

The “due dates” for these assignments are Sunday at 10:00PM. This is purely advisory to help you stay on track. If you turn them in late, it does not hurt your grade (up to the weekend before final exams).

Please note that these assignments will only be scored once. There is not an opportunity to improve your score once an assignment is graded. But you are welcome to bring a draft of your work to an office hour, where we can informally look it over together to catch any significant issues before you turn it in.

Exams. There is a final exam during finals week. It is worth 18% of your grade. There are two midterm exams, each worth 16% of your grade.

Please see the [Calendar](#) for dates.

The format of the exams is not fully determined at this time. You will have modules in D2L devoted to each exam with information about them.

8 WeBWorK Assignments

I have made an account for you on a program called WeBWorK that you will access through D2L. Each week there are problem sets and you are required to answer them online using WeBWorK. The topics that we cover in a week have exercises that are typically due Monday of the following week at 10:00PM, but can be worked on much earlier. You may submit answers any time before the due date.

Why are we using WeBWorK? Traditionally, homework comes from textbook problems that students would do on paper, and then turn in to the instructor. One drawback of this is that students get no feedback at all until up to a week later, and at that point the student may be no longer actively thinking about material from two weeks ago. Another issue is that it is not possible for a student to do the appropriate amount of homework and for the instructor to give quality feedback for every single exercise. Often an instructor is only able to give feedback for a small subset of the exercises. Using WeBWorK brings the following advantages over traditional homework.

Cost	WeBWorK is free, unlike many online homework programs.
Timely Feedback	Rather than waiting a week for written feedback from your instructor, you get instant feedback from WeBWorK.
Quality Feedback	WeBWorK will do more than just tell you if you are right or wrong. For example, it will usually tell you if you haven't completely simplified an answer or forgot to include units when they are required. Sometimes it will do even more.
Ease of Communication	WeBWorK encourages you to write your instructor for help, who can provide even higher quality feedback based on your message and your previous attempts.
Multiple or Unlimited Attempts	On paper, when you submit an answer, that's the end of it. With WeBWorK you might get a problem wrong on your first attempt, but you are encouraged to figure out your mistakes and try again.
Efficient Use of Class Time	Your instructor can monitor the whole class and see in real-time which problems and concepts are causing the class difficulty.
Extra Practice	Your instructor can set things up so that you can retry each problem with new random numbers involved. If you are unsure if you have mastered a skill, this gives you a way to keep practicing.

Logging in to WeBWorK. In D2L, there is a link to log yourself into WeBWorK in the navigation bar for the course.

Homework Sets Menu. This shows you the assignments that have been assigned to you and when they are due. You may:

- click on an assignment and begin working on problems online
- check the box next to an assignment and click **Download Hardcopy** to get the assignment as a .pdf file which you may then print to work on away from a computer.

When you click on an assignment, you will see a screen with the problem numbers listed. Off to the right is a message for you that might have specific instructions or information about the assignment. You should always look for and read this message.

Emailing for Help. When you are stumped, you can click the **Email Instructor** button at the bottom of any problem. Write a message explaining what you have tried and if possible, include the work from your calculations. WeBWorK will send your instructor an email with helpful information (like all of the incorrect attempts you have tried) and they get back to you soon with a response. When they respond, it will be with an email, so ***you must remember to check your email.***

Math Achievements. As you complete more problems through the term, you will win badges for various "achievements". For example, the "On One Hand" badge is for completing a homework set with fewer than five incorrect submissions. Both earning badges and just plain answering questions

correctly will earn you “achievement points”. As you gain more achievement points, you will level up. Each time you level up, you earn an item that can be used to affect your grade.

Level 1: Lesser Rod of Revelation	Give yourself 50% credit on one problem.
Level 2: Potion of Forgetfulness	Drop the number incorrect attempts down to 0.
Level 3: Tunic of Extension	Extend the due date of a currently open homework for 24 hours.
Level 4: Cupcake of Enlargement	Double the weight of one problem.
Level 5: Box of Transmogrification	Change a single problem to be a (newly randomized) copy of a different problem on the same homework set.
Level 6: Greater Rod of Revelation	Give yourself 100% credit on one problem.
Level 7: Robe of Longevity	Extend the due date of a currently open homework for 48 hours.
Level 8: Scroll of Resurrection	Reopen a homework set (even a closed one) for an additional 24 hours. All problems will be re-randomized.
Level 9: Greater Tome of Enlightenment	“Earn” 100% on every problem in a single homework set.
Level 10: Cake of Enlargement	Double the weight of an entire set.

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10 Student Resources

PCC wants you to be successful and have resources that may help. If you face challenges affording food or housing, or if you need access to technology, this will naturally affect your classwork. Check out these resources: [Student COVID-19 Resources](#)¹ and [Emergency Funds](#)². You can also contact a campus Student Conduct and Retention Coordinator at conductandcare@pcc.edu.

¹www.pcc.edu/coronavirus/information-for-students/resources/

²www.pcc.edu/enroll/paying-for-college/emergency-funds.html

11 Miscellaneous Items

ADA Accommodation. Students who experience disability-related barriers should contact Disability Services: www.pcc.edu/disability. If students elect to use approved academic adjustments, they must provide, in advance, formal notification from Disability Services to the instructor.

Email Notice. Due to Federal laws and concerns about privacy, all email communication between instructor and student shall be done via ***PCC assigned email address***. Access email via MyPCC—see instructor during office hours if unfamiliar with using MyPCC.

Equity & Inclusion Nondiscrimination Nonharassment (Title IX). Portland Community College is committed to creating and fostering a learning and working environment based on open communication and mutual respect. This is an integral part of the College's academic mission to enrich our students' educational experiences and prepare them to live in and contribute to a global society. If you believe you have encountered sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, veteran status, sex, sexual orientation, gender identity, or disability please contact the Office of Equity and Inclusion at (971) 722-5840 or equity.inclusion@pcc.edu.

www.pcc.edu/about/equity-inclusion/eeo-statement.html

www.pcc.edu/about/equity-inclusion/nonharassment/

Flexibility Statement. The instructor reserves the right to modify course content and/or substitute assignments and learning activities in response to institutional, weather, or class situations. Flash Alert Messenger is a free service that delivers closure information: www.pcc.edu/about/announcements/closure-information.html

Sanctuary College. PCC is a sanctuary college. See: www.pcc.edu/resources/undocumented-students

Grading and Registration Policies and Deadlines. See:

Adding and www.pcc.edu/enroll/registration/dropping.html

Dropping

Grading www.pcc.edu/registration/grading-policy/

Options

Grading www.pcc.edu/resources/student-records/grading/

Guidelines

Student Rights and Responsibilities Handbook. Students are required to comply with the Student Rights and Responsibilities Handbook. Included are policies on Students Rights, Student Conduct, Grade Appeal, Academic Integrity, Consensual Relationship Statement, and Children on PCC properties.

www.pcc.edu/about/policy/student-rights/

www.pcc.edu/about/policy/student-rights/documents/student-conduct.pdf

www.pcc.edu/about/policy/student-rights/documents/grade-appeal.pdf

www.pcc.edu/resources/academic/standards-practices/academic-integrity.html

www.pcc.edu/about/policy/student-rights/documents/relationships.pdf

www.pcc.edu/about/policy/student-rights/documents/children.pdf

12 Special Dates

The following special dates are of interest to everyone:

Sat	Apr 9	Last day to choose financial aid refund option: www.pcc.edu/enroll/paying-for-college/tuition/refunds/my-refunds.html .
Tue	Apr 12	Last day to add classes. Last day to drop 8–12 week classes: www.pcc.edu/enroll/registration/dropping.html
Sat	Jun 11	Last day to change grade option for 11–12 week classes: www.pcc.edu/enroll/registration/grading-policy.html . Last day to withdraw from 11–12 week classes: www.pcc.edu/enroll/registration/dropping.html#withdraw .

13 Calendar

The official timeline for this course will be managed with D2L. What matters most is whatever dates are in the modules inside D2L. Details may change as the term progresses, and this will be reflected in the D2L modules. So the information below is subject to change. It is only included here for a quick reference at the start of the term.

Week of	Content
4/4	8.1 Graphical and Numerical Solutions to Differential Equations 8.2 Separable Differential Equations
4/11	8.4 Modeling with Differential Equations 9.1 Sequences
4/18	9.2 Infinite Series 9.2 Infinite Series
4/25	Midterm Exam 1 9.3 Integral Test
5/2	9.3 Comparison Tests 9.4 Ratio Test
5/9	9.5 Alternating Series 9.5 Absolute Convergence
5/16	Midterm Exam 2 9.6 Power Series
5/23	9.6 Power Series 9.7 Taylor Polynomials
5/30	Memorial Day 9.8 Taylor Series
6/6	9.8 Taylor Series Review/Catch-up
6/13	Final Exam