

MA 166 Online Summer 2025 Analytical Geometry and Calculus II

Instructor: Dr. Daniel Yorgov 4 Credit Hours **Course Website:** purdue.brightspace.com

E-Mail: yorgovd@pfw.edu (email is the best way to reach me)

Office Hours at <https://purdue-edu.zoom.us/j/97631125218> TR 11 am – 12 pm, or by appointment

Mr. Matthew Hodges, hodgmi01@pfw.edu, is the teaching assistant for this class. **Matthew's virtual help sessions** are Mondays and Wednesdays 2 – 3 p.m. at <https://purdue-edu.zoom.us/j/99147468939>

Free Tutoring: Details TBA soon

This is an **asynchronous online course with no scheduled meeting time**. You can complete the work at your convenience. Submission of at least one graded item per week constitutes attendance.

I suggest **scheduling your study time** just as you would for an on-campus course. Mark specific days and times for this course in your weekly calendar and commit to them.

Do not just wait until you have “free time”. Due to the fast pace of this class, it is imperative that you keep up with the material and do not fall behind.

Fast Pace: An online mathematics course requires a serious time commitment, especially during the summer. We will cover the same material as a regular 16-week lecture course offered in the fall or spring semesters, but in only eight weeks. This is exactly two times faster than the regular semester pace.

Time Commitment: Mathematics and Statistics are **not spectator sports**. No pain, no gain! Face-to-face 4-credit summer classes meet for 7 hours per week. A general rule of thumb for math classes is that for every hour of class time, you should expect to spend 1-2 hours studying and doing homework outside of class. If you can spend **12-20 hours per week on this course**, turn in all assignments on time, watch the videos, and seek help when needed, you will not only pass with a good grade but also find it a beneficial experience. If you are **overwhelmed with other commitments** this summer or feel uncomfortable using technology and computer-enhanced learning, you may want to consider taking a regular semester version of this class instead. If you can commit the time and energy, then **welcome aboard and let's get started!**

Communication Channels

I will use Brightspace for announcements and other posts. Check MyLab Math (next page) for deadlines. Please also check your school email at least daily for announcements and updates.

Discussion Board: The discussion board can be used if you want to talk about issues you are having with classwork, class materials, homework questions, etc. Go to Brightspace to access the forums.

- If you have good suggestions or strategies that can help your classmates, please post! Homework bonus points might be rewarded for useful posts or answers to a course related or HW question before I do.

Office Hours will be via Video Chat **Tuesdays and Thursdays 11 am – 12 pm**, or by appointment.

You can ask about the rules, class material, or simply join me if you have questions or concerns.

Join at <https://purdue-edu.zoom.us/j/97631125218> in Firefox or Chrome or with a free smartphone app.

Anonymous feedback at: <https://tinyurl.com/uadthvs>

- You can provide anonymous comments and suggestions about the way I have deployed the online materials, how you feel about the expectations, etc. You can do this more than once!

University statements on Title IX, ADA, and other student rights are linked in the “**University Policies**” module on our Brightspace page; they apply to this course.

Required Materials: Besides a computer with an internet connection, you will also need:

1. MyLab Math Course ID: **yorgov69377**. You already have an assignment that is due Wednesday.

Please register now, <https://mlm.pearson.com/enrollment/yorgov69377>

- If you **have recently purchased a 24-month access** for Calculus I, you should be able to access the course by clicking the link and using your old login credentials.

- For those who need to purchase new access this semester:
 - o If you plan to take MA 261 next semester you get a price break with the 24-month access.
 - o if you aren't sure this course is for you or if you prefer not to make a payment now for any reason, you can get **free access for 14 days** but **you can only do this ONCE** per class.

The text *Briggs, Cochran, Gillet, and Schulz: Calculus: Early Transcendentals, 3e, ML Rev 2, Pearson* is **included digitally with your purchase of MyLab Math**. Most of your work will be in MyLab Math.

2. Calculator or Calculator Emulator is recommended.

You can use an actual **TI-83/84+/84CE+** graphing calculator or a TI-84+ calculator emulator on a computer. There are also some TI-84+ emulator apps for phones. Alternatively, you could **rent** a calculator from the Student Government: <https://www.pfw.edu/student-government/services/rentals>. Although you could use another calculator or software for this class, all support materials and examples will be with TI-83/84+.

Use of Artificial Intelligence (AI): You may use AI, such as GPT 4.0, to help generate ideas and brainstorm. However, be aware that the output generated by these programs may be inaccurate, incomplete, or false. For all homework questions, you are expected to derive your own solutions. You must work alone without any human or AI assistance on quizzes and exams. The goal of assignments is not just to get the correct answer, but to understand the material and learn how to apply it. Using AI tools can be a part of your learning process. However, it is important for you to ensure you understand the concepts and can apply them independently.

Academic Honesty: Plagiarism is the use of another person's words or ideas without giving credit to that person. Plagiarism and cheating of any kind will not be tolerated and will be immediately reported to the dean. Cheating may result in a course grade of F and possibly expulsion from the University. You are responsible for adhering to campus policies on academic honesty as stated in PFW's Code of Student Conduct (see <http://www.pfw.edu/committees/senate/code/>).

Assessment

Class Sessions will include videos and problems provided by the publisher.

- You have unlimited attempts for the questions in a "Class Session" and no penalty for late submissions. Submissions for this category close one week after the respective due date.
- You can print the lecture notes handouts available in *Brightspace/Content/LectureNotes/*
- It is recommended to utilize a notebook for all questions. Consider using pencil and paper to rewrite the question in your notes, then solve the problem.
- For certain questions video solutions to similar question are available, and for the majority of questions, help is provided: click *Help Me Solve this* or *View an Example*.
- Based on your mathematical background and personal pace, anticipate spending between 1-3 hours on each "Class Session", which includes watching videos and solving problems. Your objective is to **master the material**, addressing any gaps in understanding at this stage.
- Avoid gaming the system just to earn credit and move on. The **same material will reappear** in Homework, Quizzes, and Tests. It is beneficial to learn this material during the class session assignments when all available question help is enabled.

Online Homework (HW): The online homework will consist of multiple-choice assignments posted on [MyLab](#). You can attempt up to three versions of a homework question with up to two tries per question, and the best result will be recorded. Late homework will be accepted with 20% penalty for up to a week after the deadline.

Quizzes: There will be four timed quizzes administered online via MyLab. Each quiz is a single attempt, and you are expected to work independently.

Exams: There will be three timed exams administered online via MyLab. Each exam is a single attempt, and you are expected to work independently. Please write down your work on paper.

You must **upload your written work** to a separate assignment specifically created for each exam in Brightspace within 30 minutes after completing the exam to be eligible for full or partial credit.

Activities: Throughout the semester, you will be asked to complete activities online or upload your work to Brightspace. Specific details will be provided throughout the semester. Late activities will be accepted up to two calendar days from the due date, but there may be a penalty on the score.

Computing Your Final Grade:

Class Sessions	10%	A: 90% - 100%
Online Homework	20%	B: 80% - 89.9%
Quizzes (5% each)	20%	C: 70% - 79.9%
Three Exams (15% each)	45%	D: 60% - 69.9%
Activities	5%	F: 59.9% and below

YOU RECEIVE THE GRADE YOU EARN, NOT THE GRADE YOU NEED!

Other Concerns: You are expected to read and follow all the information in the current PFW Student Handbook and Planner. In particular, be familiar with the *PFW Code of Student Rights, Responsibilities, and Conduct*. A copy can be found on the website <http://www.pfw.edu/committees/senate/code/>.

Information Technology Services Help Desk: If you have questions concerning the use of computers at PFW, hardware and software support or student email accounts, please contact the IT Help Desk in KT 206, telephone (260) 481-6030, or visit <https://www.pfw.edu/offices/information-technology-services/>.

Special Needs: PFW is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Services for Students with Disabilities as soon as possible to work out the details. Once the Director has provided you with a letter attesting to your needs for modification, bring the letter to me. For more information, please visit the web site for [Services for Students with Disabilities \(SSD\)](#).

Personal Problems: If at any point during the semester, you find yourself in need of talking to someone about an academic, personal, or family crisis, please use the free resources that the University provides.

- Academic, Health, and Wellness resources, including free counseling:

<https://www.pfw.edu/offices/enhancement-learning-teaching/pedagogical-resources/student-support-services#services-3>

Official Objectives:

- (1) **Techniques of Integration:** Students learn and use all the standard integration methods, including integration by parts, trigonometric substitution, integration of trigonometric functions, and integration of rational functions using partial fractions. They learn how to use tables and computer algebra systems to find the antiderivatives of more complicated functions. They learn the importance of approximate integration, and know how to use the Midpoint Rule, the Trapezoidal Rule and Simpson's Rule to approximate integrals. Students understand and can evaluate improper integrals by definition, or decide if convergent or divergent using the Comparison Theorem.
- (2) **Applications of Integral:** Students should be able to divide a quantity into small pieces, estimate with Riemann sums, and recognize the limit as an integral. General methods are developed for finding geometrical quantities, such as areas of regions and surfaces, volumes of solids, arc length of curves, as well as quantities used in Physics and Engineering, such as work, hydrostatics pressure and force, and moments and centers of mass. They also learn about basic differential equations, and solve separable differential equations.
- (3) **Infinite Series:** Students learn evaluate limits of sequences, and can decide if a sequence is convergent or divergent. They learn the definition of convergence, the basic properties and several important examples of infinite series. They can decide if a geometric or telescopic series is convergent or divergent, and find the sum of the series if convergent. They use the Divergence Test, the Integral Test, the Comparison and the Limit Comparison Tests to decide if a given series is convergent or divergent. They learn about alternating series and about absolute convergence, and know how to use the Ratio and Root tests. They understand power series, their basic behavior and their applications. They can use different methods to represent functions as power series.

- (4) **Parametric Equations, Polar Coordinates, and Complex Numbers:** Students learn about parametric curves and use calculus to find tangent lines, areas, and arc lengths for parametric curves. They understand the polar coordinate system, and can graph polar curves. They use calculus to find tangent lines, areas, and arc lengths for polar curves. Students learn the definition and basic operations with complex numbers. They can solve equations that have complex roots. They can represent complex numbers in polar form and perform multiplications, divisions, evaluate powers and take roots using the polar form. They learn Euler's Formula in connection to power series and they revisit the Fundamental Theorem of Algebra.

General Education Course Learning Outcomes:

This course satisfies category A.3 Quantitative Reasoning of the General Education requirements:

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| <p>3.1. Interpret information that has been presented in mathematical form (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures).</p> <p>3.2. Represent information/data in mathematical form as appropriate (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures).</p> <p>3.3. Demonstrate skill in carrying out mathematical (e.g. algebraic, geometric, logical, statistical) procedures flexibly, accurately, and efficiently to solve problems.</p> | <p>3.4. Analyze mathematical arguments, determining whether stated conclusions can be inferred.</p> <p>3.5. Communicate which assumptions have been made in the solution process.</p> <p>3.6. Analyze mathematical results in order to determine the reasonableness of the solution.</p> <p>3.7. Cite the limitations of the process where applicable.</p> <p>3.8. Clearly explain the representation, solution, and interpretation of the math problem.</p> |
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MA 166	<u>Tentative Course Calendar Summer 2025</u> (subject to change with notice)		Instructor: Yorgov
<u>Week of</u>	<u>Part 1</u>	<u>Part 2</u>	
May 19	Intro, 6.1	6.2, 6.3	
May 26	<i>Memorial Day</i> , 6.4	6.5, 6.6	Quiz 1 out Friday
June 2	6.7, 8.2	8.3-8.5	Quiz 1 due Wednesday 11: ⁵⁹ pm Exam 1 out Friday
June 9	Exam, 8.9	9.1,9.3	Exam 1 due Tuesday 11: ⁵⁹ pm Quiz 2 out Friday
June 16	12.1, 12.2	12.3, Complex	Quiz 2 due Tuesday 11: ⁵⁹ pm Quiz 3 out Friday
June 23	10.1-10.3	10.4, 10.5	Quiz 3 due Tuesday 11: ⁵⁹ pm Exam 2 out Friday
June 30	Exam, 10.6, 10.7	11.1, <i>Ind. Day</i>	Exam 2 due Tuesday 11: ⁵⁹ pm Quiz 4 out Friday
July 7	11.2, 11.3	11.4, Exam 3	Quiz 4 due Tuesday 11: ⁵⁹ pm Exam 3 is out on Wednesday evening, due Saturday, July 12 th , 11: ⁵⁹ pm

Important Dates:

May 21– Last Day for Full Refund June 13 – Last Day to Withdraw Online (with W grade)

Talk to Me: I will give my best effort to make this class run smoothly for you, but it is important that you **communicate with me when any issues arise** or if there are any problems/concerns.