

WORCESTER POLYTECHNIC INSTITUTE

MA1023, Calculus III – B Term, 2021

Syllabus

Office Hours

The instructor will hold four office hours per week (two in person, two virtually). Each PLA will hold one office hour per week.

[What are office hours?](#) Students are encouraged to attend office hours as frequently as possible to ask questions and receive feedback on problems and assignments.

Textbook

The textbook for all Calculus courses at WPI is *Thomas' Calculus. Early Transcendentals* by George B. Thomas, Joel Haas, Christopher Heil, and Maurice D. Weir. 14th edition, Pearson, Boston, 2018.

Students can either buy or rent the textbook, new or used. Hardcover, softcover, loose leaf, and electronic versions are all equivalent. The textbook can be purchased through the WPI bookstore or from any other source. There is no requirement to have access to *MyMathLab* for this course.

Class Structure

Lecture

M, Tu, Th, F 8:00-8:50 AM

In person

Discussion Sessions

M 11:00-11:50 AM, in person

Tu 12:00-12:50 PM, in person

Course Description

This course provides an introduction to series, parametric curves, and vector algebra. MA 1023 – Calculus III is a category I course, i.e. it is offered at least once a year every year at WPI. The recommended background is MA 1022 – Calculus II. Although the course may make use of computers, no programming experience is needed or assumed.

Technology needed for this course: internet connection, computer access, access to Canvas, and PDF file converter.

Course Content

The course outline is as follows (numbers in parentheses refer to book sections).

Part I: Indeterminate Forms and Improper Integrals

1. Indeterminate forms (4.5)
2. Improper integrals (8.8)

Part II: Sequences, Series, Power Series

3. Sequences (10.1)
4. Series (10.2)
5. Integral test (10.3)
6. Comparison Tests (10.4)
7. Absolute Convergence; The Ratio and Root Tests (10.5)
8. Alternating Series and Conditional Convergence (10.6)
9. Power Series (10.7)
10. Taylor and Maclaurin Series (10.8, 10.9)

Part III: Geometry

11. Parametric Curves (11.1, 11.2)
12. Polar Coordinates (11.3-11.5)
13. Vectors, dot product, and cross product (12.1–12.4)
14. Lines and planes in space (12.5)

The [class schedule](#) linked in the *Welcome and Key Files* module shows important dates and which book sections are covered in each lecture.

Grading

There will be daily preview assignments, weekly written assignments, one midterm exam, and one final exam. The course grade will be determined with the following breakdown:

Preview Assignments	10%
Written Assignments	20%
Midterm Exam	30%
Final Exam	30%
Lab Grade	10%

Final letter grades will be assigned as follows:

A	90.0 – 100
B	80.0 – 89.0
C	70.0 – 79.0
NR	0 – 69.0

Rounding will be applied following the half up tie-breaking rules https://en.wikipedia.org/wiki/Rounding#Round_half_up.

A grade of I (incomplete) is available for students who encounter special medical issues or other challenges during the term. Reach out to the instructor as soon as possible if you are facing particular difficulties and want to discuss this grading option.

Homework

All homework assignments will be administered, submitted, and graded through Canvas. Solutions will be posted for all written assignments. Each assignment should be submitted as a single PDF file with the problems solved in the correct order.

If you are not sure how to convert your homework into a PDF, check out the page titled [PDF Upload Information \(for Assignment Submissions\)](#) on Canvas under the *Resources and Support* module.

Preview Assignments

Daily preview assignments will be due each class day at 7:59 AM. There will be no preview assignments due on the first day of class and on the midterm and final exam

days. These are meant to be short, preview assignments of upcoming lecture content; they should not take more than 30 minutes each to complete.

No extensions will be granted for preview assignments. The lowest five (5) preview assignment scores will be dropped. Preview assignments will be graded for completion based on the following rubric:

0 = no submission or submission that is <30% complete

1 = submission that is >30% but <70% complete

2 = submission that is >70% complete

Written Assignments

Weekly written assignments will be due each Monday at 11:59 PM. There will be no written assignment due on Monday, November 29th. Submissions should be neat and readable.

Two extensions for written assignments will be granted to students who request them via email ahead of the deadline. Students should email the PLA leading their conference (and cc the instructor) letting them know they request the extension. Extensions will not be granted on the last written assignment due on Monday, December 13th.

All other late written assignments will be graded for up to 50% of the points as long as they are submitted before solutions are posted. The lowest written assignment score will be dropped. Written assignments will be graded for correctness. Students experiencing extenuating circumstances should contact their instructor as soon as possible.

Exam Policies

The two exams for this course are scheduled as follows:

Midterm Exam: Monday, November 22nd, 8:00-8:50 AM -- **Remote**

Final Exam: Thursday, December 16th, 8:00-8:50 AM -- **In Person**

Please review the [How Will Exams Be Administered?](#) page in the *Welcome and Key Files* module on Canvas for important information about exams. Students must contact their instructor as soon as possible if they have scheduling conflicts on either of the exam dates. If possible, a make-up exam will be offered.

Class Environment

You deserve to be addressed in the manner you prefer. To guarantee that I address you properly, you are welcome to tell me your pronoun(s) and/or preferred name at any time, either in person or via email. I will not ask you directly in class to avoid putting anyone on the spot.

We embrace diversity of gender, gender expression, sex, sexual orientation, race, ethnicity, national origin, age, religion, disability status, family status, socioeconomic background, and other visible and non-visible categories. I do not tolerate discrimination.

You deserve a community free from discrimination, sexual harassment, a hostile environment, sexual assault, domestic violence, dating violence, and stalking. If you experience or know of a Title IX violation, you can find many options for support and/or reporting at <https://www.wpi.edu/offices/title-ix>.

Accommodations

Students with approved academic accommodations should plan to submit their accommodation letters through the Office of Accessibility Services Student Portal as soon as possible. All academic accommodations will be honored in this course. After submitting your letter through Clockwork, please follow up with the instructor to make sure plans are in place to implement your needed accommodation.

Should you have any questions about how accommodations can be implemented in this particular course, please contact Amy Curran at acurran@wpi.edu. Students who are not currently registered with the Office of Accessibility Services (OAS) but who would like to find out more information regarding requesting accommodations and what that entails should plan to contact the OAS office via phone at (508) 831-4908 and/or via email at AccessibilityServices@wpi.edu.

Academic Integrity

The honor code is a cornerstone of our learning community and of this course. It is your responsibility to know and follow academic integrity policies available at <https://www.wpi.edu/about/policies/academic-integrity>. I will gladly answer any questions you have.

Additional Resources

WPI has some available resources to support you in this class and beyond. Here are some to check out:

Academic Resources Center, <https://arc.wpi.edu/>

IT Service & Support, <https://www.wpi.edu/offices/services-support>

Student Development and Counseling Center, <https://www.wpi.edu/offices/student-development-counseling-center>

Office of Accessibility Services, <https://www.wpi.edu/offices/office-accessibility-services>

Health Services, <https://www.wpi.edu/student-experience/health-counseling/health-services>

Multicultural Affairs, <https://www.wpi.edu/offices/office-multicultural-affairs>

LGBTQ+ Support, <https://www.wpi.edu/student-experience/resources/lgbtq-support>

International House, <https://www.wpi.edu/offices/international-house>

Syllabus Change Policy

Except for changes that substantially affect grading policies, this syllabus is a guide for the course and is subject to change. All changes will be communicated by the instructor in writing with advance notice.