Math 112 Town Hall

Course Director:
brett.c.smith@yale.edu

Yale University

August 10, 2022
Town Hall Goals.

- Describe Math 112 and the course goals.
- Talk about placement preregistration.
- Let you know what to expect in terms of classes, workload, tests and other assessments.
- Point you to resources and give strategies for being successful.
- Answer your questions.
The Calculus Sequence.
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- Math 112 or Math 110/111 (two-semester course with precalculus)
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- Math 115 or Math 116 (for biosciences)
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- Math 115 or Math 116 (for biosciences)
- Math 120 or Math 121 (for biosciences)
More Math 112 Information.

Section times.
Section 1, TTh 9-10:15am
Section 2, TTh 11:35-12:50pm
Section 3, TTh 2:30-3:45pm
Section 4, MW 9-10:15am
Section 5, MW 11:35-12:50pm
Section 6, MW 2:30-3:45pm

Preference selection/waitlists.
Preference selection
Math advising: first year student resources page
Section waitlists: managed through YCS

Syllabus information on Canvas: accessed through Course Search

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What are our goals for Math 112 students?

Habits of mind.
- Interpret mathematical models in terms of real-world applications.
- Gain fluency with mathematical notation and terminology.
- Develop logical reasoning.
- Build strategies and resilience for solving difficult problems.

Learning Objectives.
- Use limits to define the derivative of a function.
- Develop rules for finding derivatives.
- Apply derivatives in real-world problems (including DEQs).
- Introduce definite integrals and the FTC.
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- Develop rules for finding derivatives.
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- Introduce definite integrals and the FTC.
Should you take calculus?

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Should you take calculus?

- Are you interested in learning about mathematical models?
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- Are you interested in majoring in a STEM field or economics?
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- Have you taken a precalculus/functions course?
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  - factoring: \[
  \frac{x^2 - 1}{x + 1}
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  ▶ trigonometry: \[
  \sin(\arccos(1/2))
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- factoring: \[ \frac{x^2 - 1}{x + 1} = \frac{(x - 1)(x + 1)}{x + 1} \]

- trigonometry: \[ \sin \left( \arccos \left( \frac{1}{2} \right) \right) = \sin \left( \frac{\pi}{3} \right) = \frac{\sqrt{3}}{2} \]

- logarithms: \[ \ln (a \cdot b) \]
Should you take calculus?

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- factoring: $$\frac{x^2 - 1}{x + 1} = \frac{(x - 1)(x + 1)}{x + 1}$$
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- logarithms: $$\ln \left( a \cdot b \right) = \ln \left( a \right) + \ln \left( b \right)$$
Should I start in Math 112 or a different calculus course?

Many students in Math 112... have never taken a calculus course before. took AP Calculus AB (or an equivalent differential calculus course) but were not confident in their understanding of the material. Students who have truly mastered the material in AP Calculus AB are prepared to take Math 115 or 116. Placement into Math 112 via the math placement test is required before entering preference selection. If you have questions about your placement, go to a calculus advising session. Do not enter preference selection for multiple calculus courses.
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- have never taken a calculus course before.
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Many students in Math 112...

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- have never taken a calculus course before.
- took AP Calculus AB (or an equivalent differential calculus course) but were not confident in their understanding of the material.

Students who have truly mastered the material in AP Calculus AB are prepared to take Math 115 or 116.
Should I start in Math 112 or a different calculus course?

Many students in Math 112...

- have never taken a calculus course before.

- took AP Calculus AB (or an equivalent differential calculus course) but were not confident in their understanding of the material.

Students who have truly mastered the material in AP Calculus AB are prepared to take Math 115 or 116.

Placement into Math 112 via the math placement test is required before entering preference selection.
Should I start in Math 112 or a different calculus course?

Many students in Math 112...
- have never taken a calculus course before.
- took AP Calculus AB (or an equivalent differential calculus course) but were not confident in their understanding of the material.

Students who have truly mastered the material in AP Calculus AB are prepared to take Math 115 or 116.

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Calculus Advising Sessions

Zoom links are on the First year student resources page of the Math Department's website.

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Calculus Advising Sessions

- Wednesday, August 10, 7:20-9pm
- Thursday, August 11, 9:20-11am
- Thursday, August 11, 3:20-5pm

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Assessments in Math 112.

Problem sets (due weekly, online submission)

Two midterm exams (evenings, 9/29 and 11/10)

A mastery test for computing derivatives (first attempt in class, 10/10 or 10/11)

A cumulative final exam (Saturday, 12/17)

Your grade is based on your performance, not how well your peers do.

We encourage you to form study groups and collaborate on homework.

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Resources in Math 112.
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- Office hours.
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- Peer tutors.
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- Practice exams.
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- Ximera (videos and practice problems).
Keys for success.

1. Stay on top of course material and manage your time.
2. Use the homework to check your understanding.
3. Create a study group.
4. Make mistakes and reach out when you need help.

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