

Math 16A: Short Calculus: First Quarter
Winter Quarter 2023 at UC Davis

(Tentative) Schedule:

Disclaimer: The following schedule is tentative, and there may be changes. I will send an announcement on Canvas to notify students of any changes.

Also see the department syllabus for Math 16A (https://www.math.ucdavis.edu/courses/syllabus_detail?cm_id=12).

Lecture 1: Cartesian plane, distance formula, midpoint formula, graphs, intercepts, circles, and lines.

Lecture 2: Functions, composition of functions, and inverse.

Lecture 3: Limits.

Lecture 4: Limits.

Lecture 5: Vertical asymptotes and finite limits; horizontal asymptotes and limits of infinity.

Lecture 6: Continuity.

Lecture 7: Slope of the tangent line, definition of the derivative.

Lecture 8: Differentiability and continuity.

Lecture 9: Trigonometry review.

Lecture 10: Constant rule, power rule, constant multiple rule, sum and differences rules.

Lecture 11: Average rate of change, instantaneous rate of change, velocity, marginals in economics.

Lecture 12: Product and quotient rules.

Lecture 13: Derivatives of trigonometric functions.

MIDTERM 1

Lecture 14: Chain rule, general power rule.

Lecture 15: Higher order derivatives, acceleration.

Lecture 16: Implicit differentiation.

Lecture 17: Related rates.

Lecture 18: Increasing and decreasing functions, critical numbers.

Lecture 19: Relative extrema, absolute extrema.

Lecture 20: The first-derivative test.

Lecture 21: Concavity, points of inflection, the second-derivative test.

Lecture 22: Optimization problems.

Lecture 23: Sketching graphs.

MIDTERM 2

Lecture 24: Differentials.

Lecture 25: Catch-up/Review.

Lecture 26: Catch-up/Review.

FINAL EXAM

JANUARY						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9 Lecture 1	10	11 Lecture 2	12	13 Lecture 3	14
15	16 HOLIDAY	17	18 Lecture 4 Homework 1 due by 10:00pm (on Gradescope) Technology Assignment (optional) due by 10:00pm (on Gradescope)	19	20 Lecture 5	21
22	23 Lecture 6 Homework 2 due by 10:00pm (on Gradescope)	24	25 Lecture 7	26	27 Lecture 8	28
29	30 Lecture 9 Homework 3 due by 10:00pm (on Gradescope)	31				

FEBRUARY						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Lecture 10	2	3 Lecture 11	4
5	6 Lecture 12 Homework 4 due by 10:00pm (on Gradescope)	7	8 Lecture 13	9	10 MIDTERM 1	11
12	13 Lecture 14 Homework 5 due by 10:00pm (on Gradescope)	14	15 Lecture 15	16	17 Lecture 16	18
19	20 HOLIDAY	21	22 Lecture 17 Homework 6 due by 10:00pm (on Gradescope)	23	24 Lecture 18	25
26	27 Lecture 19 Homework 7 due by 10:00pm (on Gradescope)	28				

MARCH						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Lecture 20	2	3 Lecture 21	4
5	6 Lecture 22 Homework 8 due by 10:00pm (on Gradescope)	7	8 Lecture 23	9	10 MIDTERM 2	11
12	13 Lecture 24 Homework 9 due by 10:00pm (on Gradescope)	14	15 Lecture 25	16	17 Lecture 26	18
19	20	21	22	23 FINAL EXAM 6:00-8:00pm	24	25