Learning Targets

Supplementary targets have a * next to them. All others are core targets. Check boxes from left to right as you earn E's and M's on each target.

Fill these for **mastery** → ❑❑❑ ← Then fill this for **continuing mastery** (1+ week later)

Chapter 5: I can calculate and explain the meaning of *integrals*.

❑❑❑ I.1: I can evaluate definite integrals exactly by using graphs, geometry, and using the Fundamental Theorem of Calculus (part 1) with an antiderivative.

❑❑❑ I.2: I can interpret the physical meaning of a definite integral (including integral functions) in terms of net area, net change, displacement, and accumulation, and state its units.

❑❑❑ I.3: I can explain and work with the Fundamental Theorem of Calculus (part 2), including using functions defined by integrals and constructing an antiderivative from a graph.

❑❑❑ I.4: I can estimate the values of definite integrals numerically using left, right, midpoint, trapezoid, and Simpson's rules, and can explain how each of these sums works (including over/underestimates).

❑❑❑ I.5: I can evaluate integrals using substitution, and can explain my choice of substitution.

❑❑❑ I.6: I can evaluate integrals using Integration by Parts, and can explain my choice of parts.

❑❑❑ I.7*: I can set up and evaluate integrals using Partial Fractions.

❑❑❑ I.8*: I can choose appropriate strategies for evaluating an integral, and explain my choice.

Chapter 6: I can use integrals to solve *applied problems*.

❑❑❑ A.1: I can set up and calculate area between curves in both the *dx* and *dy* directions and explain why such a setup is correct.

❑❑❑ A.2: I can set up and calculate volumes of solids using slices and revolution in both the *dx* and *dy* directions, using both disks and washers, and explain why such a setup is correct.

❑❑❑ A.3*: I can set up a relevant integral that solves an applied problem, and can explain why such a setup is correct.

❑❑❑ A.4*: I can set up and evaluate improper integrals and determine their convergence.

Chapter 8: I can calculate, explain, and use *sequences and series*.

❑❑❑ S.1: I can explain what sequences and series are, describe the difference and connections between them, and use terminology and notation correctly.

❑❑❑ S.2: I can identify convergent and divergent sequences, evaluate their limits and/or explain why they diverge, and use the sequence of partial sums to explain what it means for a series to converge.

❑❑❑ S.3: I can identify a geometric series, including its initial term and common ratio, and can find its sum (or determine that it diverges).

❑❑❑ S.4: I can use the Test for Divergence correctly and can explain its meaning.

❑❑❑ S.5: I can use the Integral, p-Series, Comparison, and Ratio tests correctly.

❑❑❑ S.6: I can identify alternating series and their sequence of positive terms, and can use the Alternating Series Test correctly.

❑❑❑ S.7*: I can determine if a series converges absolutely or conditionally and can justify my answer.

❑❑❑ S.8*: I can choose appropriate strategies for testing a series' convergence, and explain my choice.

Chapter 8: I can calculate, explain, and use *Taylor and Power Series*.

❑❑❑ T.1: I can find a Taylor polynomial or Taylor series for a function.

❑❑❑ T.2: I can explain the meaning of a Taylor polynomial and use it to approximate function values.

❑❑❑ T.3*: I can calculate the interval and radius of convergence for a power series (including endpoints) and can explain the meaning of these ideas.

❑❑❑ T.4*: I can create a new Taylor series from a Taylor series I already know.

Chapter 7: I can calculate, use, and explain the meaning of *Differential Equations*.

❏❏❏   D.1:   I can draw and use slope fields, including drawing solutions, finding equilibrium solutions visually and algebraically, and identifying their stability or instability.

❏❏❏   D.2:   I can explain what it means to be a solution to a differential equation, I can verify that a given function is a solution, and I can find a solution that satisfies a given initial condition.

❏❏❏   D.3*: I can identify and solve a separable differential equation.

❏❏❏   D.4*: I can analyze a differential equation and interpret it and its solutions in real-world terms.

Mathematical Practice: These targets apply throughout all of our work.

❏❏❏❏❏❏❏❏ M.1:   I can use appropriate mathematics from previous classes (such as Algebra and Calculus 1) to help me solve problems.

❏❏❏❏❏❏❏❏ M.2:   I attend to details (including all instructions) in my work.

❏❏❏   M.3*: Before I start a calculation, I can make and justify reasonable over- and under-estimates using simpler math, and I can explain these estimates.

❏❏❏   M.4*: I can accurately critique the reasoning of others, identify common misconceptions, and modify their work to produce a correct response.

❏❏❏   M.5*: I can write clear, well-explained, and professionally formatted solutions that follow the Calculus 2 Style Guide.

How to keep track of your progress

Each time you earn an E or M on a learning target, check off a box next to that target. Include reassessments too. For example:

       ☑☑❏   T.1:   I can find a Taylor polynomial or Taylor series for a function.

In this example, you've mastered T.1 – but you need one more E or M for continuing mastery.

Use this grid to keep track of your overall progress. **Check off boxes** from left to right as you finish them or achieve mastery. **Circle** a box when you later achieve continuing mastery. When you've checked off everything in a column, you've earned that grade!

	D	C	B	A
Core learning targets	❏❏❏❏❏❏ ❏❏❏❏❏❏	❏❏	❏❏ ○ Are 12 of the boxes circled (continuing)?	❏❏ ○ Are 16 of the boxes circled (continuing)?
Supplementary learning targets		❏❏❏❏❏❏❏	❏❏ ○ Are 7 of the boxes circled (continuing)?	❏❏ ○ Are 9 of the boxes circled (continuing)?
Guided Practices successfully completed	❏❏❏❏❏❏ ❏❏❏❏❏❏ ❏❏	❏❏❏❏	❏❏❏❏	❏❏❏❏

If you are confused or worried about your grade, see me immediately. I'll be glad to discuss it with you. *Talk to me as soon as you feel that you are falling behind.* It is important to *eventually* demonstrate mastery, but class must eventually end, and so you will eventually run out of opportunities.