# Calc III Course Notes

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June 2, 2021

- Add "give an example of a sequence with such-and-so properties" to homework 1.
- Rewrite problem 11 on HW 1 to require students to make a table of $n, a_n$, and $S_n$ for $a_n = 1/2^n$.
- Problem 5 on HW 1 should just have $e^{-n}$
- Absolute convergence test question on the final exam
- LCT question on the final exam
- Ratio test question on the final exam
- Converge/diverge instead of true/false
- On exam 2, make the integral test problem not have the property that the integral results in the value of the $k$th term...
- Focus less on the "make it look like $\frac{1}{1-x}$" problem type. Get to Taylor series faster.
- Try to connect examples. Do the same examples in multiple ways.
- Some of the chapter 6 lecture guides (6.3 especially) feel bloated and not goal-oriented.
- Spend WAY more time on Taylor series
- Connect the skills of "here are the first few terms of a sequence, now get the $n$th term" with "get the $n$th term of the Taylor series."
- I don't feel like my students understand why they're doing anything that they're doing in section 6.3. Even just getting a Taylor series is a struggle.
- Bonus 6.3 content: interval of convergence versus an interval on which it converges
- Do a "Bound $|R_1(2)|$ using Taylor's estimate" problem before putting that on the exam.

- Do an example after *every definition* to illustrate similarities/differences/relationships between that definition and other definitions.
- Evaluate some series (e.g. 6.2 (91–94))