

Math 131-H – Honors Calculus I – Course Outline

Fall 2019

1. **Sep 3,5:** Syllabus, 2.1, 2.2 – Intro to limits
2. **Sep 10,12:** 2.3–2.4 – Calculating limits, the precise definition of a limit (Homework 1: limits)
3. **Sep 17,19:** 2.5, 2.6 – Continuity, asymptotes
4. **Sep 24,26:** 2.7, 2.8 – Intro to differentiation (Homework 2: derivatives)
5. **Oct 1,3:** 3.1–3.3 – First examples of differentiation, product and quotient rules

Midterm 1, Friday October 4th

6. **Oct 8,10:** 3.4–3.6 – Chain rule and implicit differentiation (Homework 3: more on derivatives)
7. **Oct 17:** 3.8 – Applications (e.g. exponential growth) (no class October 15th due to Monday schedule)
8. **Oct 22,24:** 3.7, 3.10 – Examples, linear approximation (Homework 4: application of derivatives)
9. **Oct 29,31:** 4.1, 4.2 – Maxima and minima, the mean value theorem
10. **Nov 5,7:** 4.3, 4.5 – Graphs and curve sketching (Homework 5: curve sketching)

Midterm 2, Friday November 8th

11. **Nov 12,14:** 4.4, 4.7 – L'Hôpital's rule, application: optimization
12. **Nov 19,21:** 4.8, 4.9 – Application: Newton's method, antiderivatives (Homework 6: further application of derivatives)
13. **Dec 3,5:** 5.1, 5.2 – Intro to integration
14. **Dec 10:** Review

Final Exam, Monday December 16th