MATH 2250, Fall 2015
LECTURE SCHEDULE

INSTRUCTOR: DANNY KRASHEN

1. **Orientation**: introduction to the ideas of calculus, differentiation, integration, fundamental theorem of calculus. basic ideas of limits and their relevance. common sense definition of limits (recitation).
2. **Limits and limit laws** (Mooculus Ch 1): formal definition of limits, example via definition. limit laws (Mooculus, 1.3), examples.
3. **Limits, continuity, squeeze**
   i. limit laws (1.3) give continuity for polynomials, roots, etc.
   ii. mention that trig functions are continuous (continuity in 2.3).
   iii. examples, group work (radical cancellation!).
   iv. squeeze (1.3.5), sine (1.3.6)
   v. examples, group work (trig stuff)
4. **Limit practice, One sided limits (recitation)**
   i. warm up: practice with trig function limits etc.
   ii. definition of one sided limits. comparison with limits.
   iii. one-sided limit laws.
5. **one-sided limits and vertical asymptotes, difference quotients and average rates of change**
   (a) one sided limit examples (1.1)
   (b) infinite limits and asymptotes (2.1).
   (c) secant lines, tangent lines and their slopes (3.1). average and instantaneous rates of change.
   (d) difference quotients, derivatives.
   (e) examples, group work.