Math 171 – Fundamental Concepts of Analysis
András Vasy, Spring 2011-2012:
PRELIMINARY SYLLABUS, AS OF MARCH 19, 2012

Subject to change!!!

April 3. Introduction; the real number system (Ch II:3-5)
April 5. The real number system (Ch. II:6-7), sequences of real numbers (Ch IV:10-11)
April 10. Countable and uncountable sets (Ch III)
April 12. Sequences of real numbers (Ch IV:12-18), the Cauchy condition (Ch IV:19) – Prof. Soundararajan
April 17. lim sup and lim inf (Ch IV:20-21), infinite series; non-negative series (Ch V:22-23)
April 19. Non-negative series, alternating series, absolute convergence (Ch V:24-26)
April 24. Power series; rearrangement of series (Ch V:27-29)
April 26. Double series (Ch V:29), Metric spaces (Ch VII:35-39)
May 1. Metric spaces, continued (Ch VII:35-39)
May 3. Continuous functions, relative metric (Ch VI:30-33, Ch VII:40-41) – Prof. Mazzeo
May 8. Compact metric spaces (Ch VII:42-43)
May 10. Midterm
May 15. Continuous functions on compact metric spaces (Ch VII:44, VI:34)
May 17. Connected and complete spaces (Ch VII:45-46)
May 22. Pointwise and uniform convergence (Ch X:60), completions (Ch VII:46)
May 24. Completions, continued (Ch VII:46), differential calculus on the real line (Ch VIII)
May 29. Differential calculus on the real line, continued (Ch VIII)
May 31. Riemann integral (Ch IX:56, writing assignment), integration and differentiation of sequences of functions (Ch X:61)
June 5. Series of functions, power series (Ch X:62-63)

Most of the material in Ch I, Ch II, Ch III:8, Ch IV:10-17, Ch V, Ch VI:30-33 and Ch VIII will not be covered explicitly in lecture, but it will be assumed that you are already familiar with the material in these sections. You should carefully read these sections, and solve enough problems to convince yourself that you are on top of this material.