Final topics of the course **Math 4181H**

The exam is on Firday, December 12, 8am-10am, or Monday, December 15, 10am-12pm. (You may choose any of these two exams.) During the exam you can use books and notes, both paper and electronic. The exam is comprehensive, but mostly focused on the following, last topics of the course:

1. Series: partial sums, convergence, the Cauchy criterion for series
2. Series with nonnegative terms; the comparison, limit comparison, root, ratio, integral, and condensation tests
3. Absolute and conditional convergence of series
4. Leibniz's, Dirichlet's and Abel's tests for conditional convergence
5. Groupings and rearrangements of series, Riemann's theorem
6. Double series, unordered sums, Cauchy's product of series
7. Infinite products
8. Pointwise and uniform convergence of functional sequences
9. Properties of the uniform limits of functional sequences
10. Uniformly convergent functional series
11. Absolute uniform convergence of functional series, the Weierstrass M-test.
12. Power series; radius and interval of convergence
13. Operations on power series
14. Taylor series
15. Analytic functions
16. Rigidity of analytic functions
17. Abel's theorem