Proposed Changes to the Undergraduate Analysis Courses

I. Creation of a new course MATH 254: Honors Analysis 1.

The current undergraduate analysis stream starts with MATH 242. This course has faced a dramatically increased enrolments (2007: 92 students; 2008: 139 students; 2009: 136 students; 2010: 135 students; 2011: 183 students, 2012: 193 students; 2013: 188 students). Due to the increased enrolment and variety of the programs it is serving now, the course has become unsuitable for our honors programs in the faculties of science and arts. The goal of the proposed course is to remedy this situation. The proposed syllabus for this course is similar to the MATH 242 syllabus, but it will be covered in more depth and accompanied by more difficult assignments. The step between the two courses, however, will be kept relatively small to enable students to move freely between one and the other, while allowing the students "trying ground" whether they would prefer the honors or the majors program. The students in MATH 254 will be allowed a late transfer to MATH 242 (the courses will be offered at the same time). The students who have taken MATH 242 and performed sufficiently well can continue with honors program.


II. The change of syllabus for the analysis stream courses.

New syllabus:


MATH 355: Honors Analysis 4. Continuation of measure theory. Functional analysis: $L^p$ spaces, linear functionals and dual spaces, Hahn-Banach theorem, Riesz represen-
The rationale. With some minor (instructor depending) variations, this syllabus correspond to what has been taught in Analysis 3 and 4 over the last seven years. The proposed Analysis 2 syllabus was taught in 2010 with great success and allows for any easy transition to more sophisticated topics of Analysis 3 and 4. The request to formalize the change of syllabus came from SUMS.

The current syllabus is:

MATH 242: A rigorous presentation of sequences and of real numbers and basic properties of continuous and differentiable functions on the real line.

MATH 243: Infinite series; series of functions; power series. The Riemann integral in one variable. A rigorous development of the elementary functions.

MATH 255: Series of functions including power series. Riemann integration in one variable. Elementary functions.
