

# Introduction to mathematical analysis 2

## Course Syllabus Fall Term 2018 — SNU

<b>Course Title</b>	Introduction to mathematical analysis 2 (in English)
<b>Course number</b>	3341.202
<b>Instructor</b>	Gerald Trutnau
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<b>Course homepage</b>	<a href="http://www.math.snu.ac.kr/~trutnau/teachingA22018.html">http://www.math.snu.ac.kr/~trutnau/teachingA22018.html</a>
<b>Course Objective</b>	The course gives an introduction to infinitesimal calculus in metric spaces.
<b>References</b>	J.E. Marsden & M.J. Hoffman, <i>Elementary Classical Analysis</i> , 2nd edition, Freeman; W. Rudin, <i>Principles of Mathematical Analysis</i> , 3rd edition, McGraw-Hill, 1976 Other references: M.H. Protter & C.B. Murray, <i>A First Course in Real Analysis</i> , Springer, 2nd edition, 1991; T.M. Apostol, <i>Mathematical Analysis</i> , 2nd edition, Addison-Wesley, 1974
<b>Description</b>	The course is a continuation of “Introduction to mathematical analysis 1”.
<b>Content</b>	Uniform convergence of functions, Weierstrass M-test, differentiation and integration of series of functions, power series and analytic functions, trigonometric series, Dini’s theorem and Weierstrass approximation theorem, Arzela-Ascoli theorem, space of sequences, singular integral, functions defined by an integral, Gamma function, integral transformation, basic properties of the Fourier transform, the Fourier transform of a continuous and a differentiable function, Lebesgue integral and Fourier series.
<b>Teaching Method</b>	Lecture, exercises.
<b>Evaluation</b>	Midterm (8th week, 75 minutes, 20 % of final score); Final exam (15th week, 75 minutes, 30 % of final score); Assignment sheets (40 % of final score); Attendance (10 % of final score, minimum attendance two thirds of all class days). Students must solve exercises regularly, and will be given assignment sheets every week.