

Introduction to mathematical analysis 2

Course Syllabus Fall Term 2018 — SNU

Course Title	Introduction to mathematical analysis 2 (in English)
Course number	3341.202
Instructor	Gerald Trutnau
E-Mail	trutnau@snu.ac.kr
Course homepage	http://www.math.snu.ac.kr/~trutnau/teachingA22018.html
Course Objective	The course gives an introduction to infinitesimal calculus in metric spaces.
References	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. Murrey, <i>A First Course in Real Analysis</i> , Springer, 2nd edition, 1991; T.M. Apostol, <i>Mathematical Analysis</i> , 2nd edition, Addison-Wesley, 1974
Description	The course is a continuation of “Introduction to mathematical analysis 1”.
Content	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.
Teaching Method	Lecture, exercises.
Evaluation	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.