

Differential equations

Course Syllabus Spring Term 2018 — SNU

Course Title	Differential equations (in English)
Course number	881.003
Instructor	Gerald Trutnau
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Course homepage	http://www.math.snu.ac.kr/~trutnau/teachingODE2019.html
Course Objective	Basic linear ordinary differential equations will be studied as well as existence and uniqueness of solutions.
Prerequisites	Basic knowledge in linear algebra and analysis
References	Boyce, William E.; DiPrima, Richard C. Elementary differential equations and boundary value problems. John Wiley & Sons, Inc., New York-London-Sydney 1965 xi+485 pp. Robinson, James C. An introduction to ordinary differential equations. Cambridge University Press, Cambridge, 2004.
Description	The course is for students who do not major in mathematics.
Tentative content	<ol style="list-style-type: none">1. Basics and definition of differential equation2. Integration techniques (substitution, integration by parts, partial fraction decomposition of rational functions)3. Separation of variables4. Linear differential equations of first order5. Solution via substitution (Euler homogeneous, Riccati, Bernoulli differential equation)6. Linear differential equations of higher order7. Linear differential equations with constant coefficients8. Exact differential equations9. Existence and uniqueness of solutions10. Power series solutions
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). Students must solve exercises regularly, and will be given assignment sheets every week.