# 273022 Fourier Series 5 sp

**Contents:** Fourier series of periodic functions ($L^1$ and $L^2$ theory), discrete Fourier transforms and the fast Fourier transform (= FFT). The basics of Fourier integrals in $L^1$ and $L^2$. A number of applications will be presented and the relationship between the different transformations are studied

**Mode of assessment:** Lectures, homework and examination

**Level:** Advanced

**Prerequisites**: Analysis and multidimensional analysis

**Literature:** Lecture notes in English will be available on the course home page. The lecture notes are mainly based on parts of the Finnish lecture notes by Gustaf Gripenberg found on the course home page translated to English by Olof Staffans, and selected parts of the book: C. Gasquet and P. Witomski, Fourier Analysis and Applications, Springer, 1999

**Time:** Mondays 10-12, Tuesdays and Thursdays 15-17 in Vektorrummet ASA B311. The first lecture will be on Monday **March 12 at 10**

Åbo, February 7, 2012

Christer Glader