

(—; 3-0-1)

## Mathematics of Engineering Systems II

MATH-335\*

This course is available to third year Arts and Science students, and is a required course in the Mathematics and Engineering program of the Applied Science Faculty.

**Textbook:** *Signal Processing and Linear Systems*  
by B. P. Lathi (Oxford University Press)

**Prerequisite:** MATH-334\*; MATH-326\* *or* 228\*.

**Instructor:** S. Kraut

**Evaluation:** If final exam mark is above 40, then the final course mark will be the maximum of the following two scores:

Score A: Homework 22.5%, Midterm 22.5%, Final 55%

Score B: Homework 22.5%, Final 77.5%

If final exam mark is below 40, course mark will be minimum of course average computed by preceding algorithm, and 49.

### Outline:

- Linear input/output systems and their stability
- Frequency-domain and time-domain analysis
- Continuous and discrete-time modeling
- Fourier, Laplace, and Z-transforms
- Sampling and the discrete-time Fourier transforms
- Applications to modulation of communications signals, filter design and digital sampling