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## Differential Equations

MATH-231\*

This course is an introduction to ordinary differential equations, and is taken by students in Honours Mathematics in the Faculty of Arts and Science. The course is more theoretical than MATH-226\*. Linear algebra is used substantially throughout the course.

**Textbook:** *Elementary Differential Equations and Boundary Problems*, 7th Edition  
by Boyce & DiPrima (John Wiley and Sons)

**Prerequisite:** MATH-110 or 111 or APSC-174\* and MATH-120 or APSC-171\*-172\*.

**Corequisite:** MATH-280\*.

**Instructor:** D. Offin

<b>Evaluation:</b>	Final Examination	65%
	Midterm Test	25%
	Homework	10%

**Outline:**

- Separation of variables, Exact equations
- First order linear DEs
- Applications of first order DEs
- Second order linear DEs with applications to spring models and rotational models
- Linear Systems of differential equations
- Qualitative theory of nonlinear systems