

# CHM222

## Introduction to Physical Chemistry

**Location:** Lash Miller, Room 161

**Dates and Time:** Mondays, Wednesdays: 4:00 - 5:00 pm

### Instructor

- Prof. Jeremy Schofield
  - Office: Lash Miller 420E, Tel: 416-978-4376
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  - Office hours: Wednesdays, 3:00 pm - 4:00 pm

### Grading

- |                             |     |
|-----------------------------|-----|
| 1. 3 Term tests             | 20% |
| • Monday, October 2 2017    |     |
| • Monday, October 30, 2017  |     |
| • Monday, November 20, 2017 |     |
| 2. Final exam               | 40% |

## Thermodynamics

1. Definitions
2. First law of thermodynamics
  - Joule and Joule-Thompson experiments
3. Second law of thermodynamics
  - Carnot cycle
4. Calculating entropy changes
5. Spontaneity
6. Chemical potential
7. Standard thermodynamic state functions
8. Equilibrium in chemical reactions
9. One-component phase equilibria
10. Partial molar quantities and ideal solutions
11. Real gases - critical phenomena
12. Colligative properties

**Textbook:** Physical Chemistry, Sixth Edition, Ira N. Levine