

# University of Pretoria Yearbook 2020

## Physical chemistry 382 (CMY 382)

**Qualification** Undergraduate

**Faculty** [Faculty of Natural and Agricultural Sciences](#)

**Module credits** 18.00

**Programmes** [BSc Computer Science](#)

[BSc Applied Mathematics](#)

[BSc Biochemistry](#)

[BSc Chemistry](#)

[BSc Geology](#)

[BSc Human Physiology](#)

[BSc Mathematics](#)

[BSc Physics](#)

**Service modules** Faculty of Education

**Prerequisites** CMY 282, CMY 283, CMY 284 and CMY 285

**Contact time** 1 discussion class per week, 2 practicals per week, 4 lectures per week

**Language of tuition** Module is presented in English

**Department** Chemistry

**Period of presentation** Quarter 4

### Module content

Theory: Molecular quantum mechanics. Introduction: Shortcomings of classical physics, dynamics of microscopic systems, quantum mechanical principles, translational, vibrational and rotational movement. Atomic structure and spectra: Atomic hydrogen, multiple electron systems, spectra of complex atoms, molecular structure, the hydrogen molecule ion, diatomic and polyatomic molecules, structure and properties of molecules. Molecules in motion: Viscosity, diffusion, mobility. Surface chemistry: Physisorption and chemisorption, adsorption isotherms, surface tension, heterogeneous catalytic rate reactions, capillarity.

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