



# University of Pretoria Yearbook 2016

## Physical chemistry 382 (CMY 382)

**Qualification** Undergraduate

**Faculty** Faculty of Natural and Agricultural Sciences

**Module credits** 18.00

**Programmes** BSc(Computer Science) Computer Science

BSc Biochemistry

BSc Chemistry

BSc Environmental and Engineering Geology

BSc Environmental Sciences

BSc Genetics

BSc Geography

BSc Geoinformatics

BSc Geology

BSc Human Physiology

BSc Meteorology

BSc Microbiology

BSc Physics

**Service modules** Faculty of Education

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

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

**Language of tuition** English

**Academic organisation** 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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