

University of Pretoria Yearbook 2022

Physical chemistry 382 (CMY 382)

Qualification Undergraduate

Faculty Faculty of Natural and Agricultural Sciences

Module credits 18.00

NQF Level 07

Programmes BSc (Computer Science)

BSc (Applied Mathematics)

BSc (Biochemistry)

BSc (Chemistry)

BSc (Geology)

BSc (Human Physiology)

BSc (Mathematics)

BSc (Physics)

BSc (Plant Science)

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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