

# University of Pretoria Yearbook 2020

## Quantum mechanics 703 (PHY 703)

<b>Qualification</b>	Postgraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	15.00
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	4 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Physics
<b>Period of presentation</b>	Semester 1

### Module content

Origins of quantum mechanics; Mathematical tools; Postulates and quantization; Conservation laws; One-dimensional problems; Linear harmonic oscillator; Three-dimensional problems; Angular momentum; Hydrogen atom; Addition of angular momenta; Spin; Approximate methods (WKB, variational approach, time-independent perturbations); Time-dependent perturbations; Scattering; Partial wave scattering; Identical particles; Hartree-Fock approach; Many-body problems and quantum statistics; Second quantisation; Relativistic equations.

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