

# University of Pretoria Yearbook 2018

## Radiation physics 110 (RFI 110)

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| <b>Qualification</b>          | Undergraduate  |
| <b>Faculty</b>                | <a href="#">Faculty of Natural and Agricultural Sciences</a> |
| <b>Module credits</b>         | 10.00  |
| <b>Programmes</b>             | <a href="#">B Rad Diagnostics</a>                            |
| <b>Service modules</b>        | Faculty of Health Sciences                                   |
| <b>Prerequisites</b>          | No prerequisites.  |
| <b>Contact time</b>           | 2 lectures per week  |
| <b>Language of tuition</b>    | Separate classes for Afrikaans and English                   |
| <b>Department</b>             | Physics  |
| <b>Period of presentation</b> | Year   |

### Module content

Units: converting, dimensional analysis. Mechanics: momentum, force, energy, circular motion, moment of inertia, angular momentum, simple harmonic motion.

Electrostatics: Coulomb's law, electric field, potential. Direct currents: resistors, Ohm's law. Capacitors: capacitance, series, parallel energy. Magnetism: force on a moving charge, electric motor. Electromagnetic induction: Faraday's law, Lenz's Law, generators. Alternating currents: average and rms value, three phase, rectification, transformers. Electrical safety. Atomic structure: ionization, excitation.

X-rays: production, absorption.

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