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# University of Pretoria Yearbook 2017

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## Theory of nuclear medicine 710 (TKG 710)

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| <b>Qualification</b>          | Postgraduate                               |
| <b>Faculty</b>                | <a href="#">Faculty of Health Sciences</a> |
| <b>Module credits</b>         | 25.00                                      |
| <b>Programmes</b>             | <a href="#">BRadHons Nuclear Medicine</a>  |
| <b>Prerequisites</b>          | No prerequisites.                          |
| <b>Contact time</b>           | 1 lecture per week                         |
| <b>Language of tuition</b>    | Module is presented in English             |
| <b>Academic organisation</b>  | Radiography                                |
| <b>Period of presentation</b> | Year                                       |

### Module content

Revision of relevant anatomy, physiology and pathology. Procedures of musculoskeletal, endocrine, respiratory, genito-urinary, gastro-intestinal, hepatobiliary, cardiovascular, central nervous systems. Infection and SPECT imaging. Procedures including lymphatics, venograms, ciliary clearance, dacryoscintigraphy. Non-imaging procedures. Radio-immunoassays: History, basic principles, antibody production. Monoclonal antibodies. Radioimmunoscintigraphy. Radiation safety. Tumour imaging and therapeutic procedures. Paediatric techniques. PET and PET/CT. Indications and contra-indications. Effects of medication on procedures. Drug intervention. Radiopharmaceuticals: methods of administration, choice, physiological pathways, patient dose, quality control. Instrumentation, collimation, settings, quality control. Patient treatment: patient preparation, instructions, route and technique of radiopharmaceutical administration. Procedures: choice of examination, patient positioning, field of view, orientation, routine views, static and dynamic imaging, SPECT imaging, modified views. Radiation effects: physical, biological and effective  $T_{1/2}$ , target organs, excretory pathways, protection. Quality control. Pattern recognition and interpretation of procedures. Problems and pitfalls. Emerging and hybrid technology and applications.

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