

# University of Pretoria Yearbook 2020

## Bioelectromagnetism and modelling 732 (EBI 732)

**Qualification** Postgraduate

**Faculty** [Faculty of Engineering, Built Environment and Information Technology](#)

**Module credits** 32.00

**Programmes** [BEngHons Bioengineering](#)  
[BEngHons Electronic Engineering](#)

**Prerequisites** Undergraduate Electromagnetism EMZ 320 or equivalent

**Contact time** 32 contact hours per semester

**Language of tuition** Module is presented in English

**Department** Electrical, Electronic and Computer Engineering

**Period of presentation** Semester 1

### Module content

The course provides an introduction to modelling of bioelectromagnetic systems using numerical methods. It focuses on the study of the interaction of electromagnetic fields with biological systems and application of this knowledge in the modelling of biological volume conduction problems. The finite element technique is used to analyse volume conduction problems. Students are introduced to an industry standard finite element software package, ANSYS, that is used to complete the practical component of the course.

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