Units of Study

Master of Medical Physics Degree (MMedPhys)
Graduate Diploma in Medical Physics (GradDipMedPhys)

PHYS 5001 Radiation Physics
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the production of ionising radiation and its fundamental interactions with matter and related factors are covered.

PHYS 5002 Anatomy and Physiology
6 credit points. Session: Semester 1. Classes: 3 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the concepts of the structure of the human cell and tissues are introduced. The organisation and function of each of the major organ systems that constitute the human body are covered. Example of pathology of diseases commonly encountered in the practice of medical physics will be included.

PHYS 5003 Instrumentation
6 credit points. Session: Semester 1. Classes: 3 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the principles underlying the fundamental operation of instrumentation used in medicine are covered. Examples will include pressure and volume measurements in respiratory medicine, and electric potential measurements in cardiology.

PHYS 5004 Radiation Dosimetry
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the principles of both absolute and relative measurement of ionising radiation in radiotherapy and medical imaging are covered. Issues related to the dosimetry of non-ionising radiation are also covered.

PHYS 5005 Radiotherapy Physics
6 credit points. Session: Semester 2. Classes: 3 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, both theoretical and practical aspects of the major topics in radiotherapy physics are covered. These topics include radiation beam production and modification, calibration and characterisation, principles of treatment planning, dose calculation and reporting, and the physics of brachytherapy.

PHYS 5006 Medical Imaging Physics
6 credit points. Session: Semester 2. Classes: 3 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the physical principles underlying the science of imaging in radiology, ultrasound, magnetic resonance imaging and nuclear medicine are covered.

PHYS 5007 Image Processing
3 credit points. Session: Semester 2. Classes: 1.5 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the theory of image formation, concepts of computing, numerical methods and image processing are covered, including techniques such as enhancement, registration, fusion and 3D reconstruction.

PHYS 5008 Radiation Biology and Health Physics
6 credit points. Session: Semester 2. Classes: 3 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the biological effects due to the interaction of radiation with human tissues from the DNA level through to the major organ systems are covered. Factors affecting dose response of tissue are considered along with models describing characteristic behaviour.

PHYS 5009 Research Methodology
3 credit points. Session: Semester 2. Classes: 1.5 hours per week. Assessment: assignments, written exam.
In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, an understanding of the processes involved in conducting various forms of research, basic data analysis and interpretation, research writing and presentation skills are covered. The professional framework is presented by considering issues such as legal, ethical and basic management issues.

PHYS 5010 Project
24 credit points. Session: Semester 1, Semester 2. Assessment: report.
NB: This unit is only available for students in the Master of Medical Physics degree
This unit is a research project to be carried out in a hospital or similar environment. The topic of the project will be determined in consultation with the course coordinator.