ABOUT THE DEGREE

The Master of Nuclear Science degree is a coursework graduate program that provides a pathway for graduates to acquire skills and renew or extend understanding of the current issues in nuclear science and technology. The program is intended to inform the policy debate, rather than to advocate a particular position. ANU is Australia’s premier institution for fundamental nuclear structure research. Since its foundation it has maintained a continuous educational effort in Nuclear Physics through undergraduate, postgraduate and postdoctoral programs.

WHO SHOULD DO THE DEGREE?

Nuclear science is currently an area of great topical debate. Students who have an interest or need to be abreast of current developments and issues in the field should take this course. These students may have, or go on to, careers in policy development, defence, security or related fields or to careers in the nuclear industry.

WHAT DOES THE DEGREE OFFER?

The program provides students with:

- a sound knowledge of the underlying nuclear science
- a knowledge of the contemporary issues associated with nuclear science
- practical knowledge of the measurement techniques employed in nuclear science
- skills to assess the place of nuclear science in a broader context
- an appreciation of the issues associated with nuclear power as a source of energy.

The program combines contact course work, with opportunities to acquire or extend practical skills. For a full time student the program takes two semesters.

APPLICATION PROCESS

Applications can be made through UAC. As preparation, an undergraduate degree in science or engineering is preferred. Prospective students with different three year degrees would also be considered, taking into account their relevant academic background and professional or other experience.
DEGREE STRUCTURE

The Master of Nuclear Science degree comprises 48 units to be made up from eight six-unit courses. For example:

**Nuclear Fundamentals (Semester 1)**
Introduces students to the key concepts in nuclear physics

**Reactor Science (Semester 1)**
Basic elements of reactors

**Accelerator Science (Semester 1)**
Particle accelerators and applications such as Accelerator Mass Spectrometry and Accelerator-Driven Waste Transmutation. This course will include a practical component.

**Nuclear Radiation (Semester 1)**
Ionizing radiation, dosimetry, risk

**Nuclear Fuel Cycle (Semester 2)**
Mining, processing and waste

**Nuclear Measurement Methods (Semester 2)**
Detection techniques and measurement methods. This course will include a practical component.

**Communicating Science with the Public (Semester 2)**
Public perception of science and how complex issues can be communicated to the public.

**Weapons of Mass Destruction Proliferation or Control (Semester 2)**
Political aspects of nuclear science, Non Proliferation Treaty

**Special Project (Semester 1 or 2)**
In depth exploration of any topic that has a connection to nuclear science or technology. This may take the form of a research essay, or a practical investigation.

These courses are offered by staff in the Departments of Nuclear Physics, Earth and Marine Science, Physics, the Centre for the Public Awareness of Science and the Strategic and Defence Studies Centre.

FOR MORE INFORMATION

Department of Nuclear Physics (RSPhysSE)
Department of Physics
T: +61 2 6125 2818
E: Aidan.byrne@anu.edu.au