

## Master of Engineering Studies in Plastics (MEngStPlastics)

MEngStPlastics is an advanced programme targeted at the plastics industry. It builds on the PGCertEng programme, extending studies of plastics materials and processing through completion of projects in specialised areas of the plastics industry. Students who have completed the requirements of the postgraduate certificate to a satisfactory level have the option to reassign the credits towards the MEngStPlastics.

### The additional requirements consist of two project courses:

- An advanced design project looking at the design and manufacture of a product. This includes factors such as the consideration of material and process selection, costing and economics, and environmental impact.
- An appropriate project devised by the student and programme convenor.

Please see the programme website for more details  
[www.engineering.auckland.ac.nz/uoq/mengst-plastics](http://www.engineering.auckland.ac.nz/uoq/mengst-plastics)

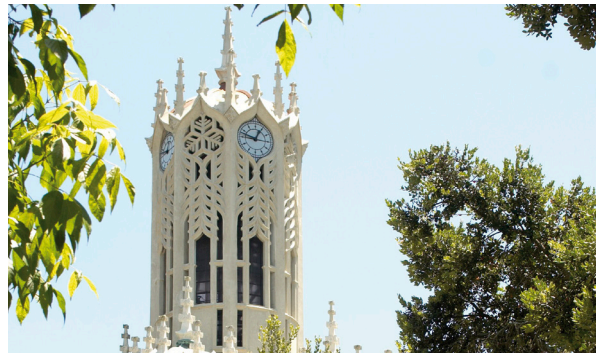


### Teaching

Teaching is conducted by University of Auckland lecturers and industry experts.

## University of Auckland

The University of Auckland is New Zealand's leading and largest university. It is ranked in the top 100 of the QS World University Rankings and is the highest ranked New Zealand university in the Times Higher Education and Shanghai Jiao Tong Academic Ranking of World Universities. The University of Auckland is an international centre of learning and academic excellence. It is New Zealand's pre-eminent research-led institution and has key linkages with many of the world's top research-intensive universities. The University's mission is to be a research-led, international university, recognised for excellence in teaching, learning, research, creative work and administration.



### Further information

For further information, please see our websites:

#### Postgraduate Certificate in Engineering Plastics

[www.engineering.auckland.ac.nz/uoq/pgcerteng-plastics](http://www.engineering.auckland.ac.nz/uoq/pgcerteng-plastics)

#### Master of Engineering Studies in Plastics

[www.engineering.auckland.ac.nz/uoq/mengst-plastics](http://www.engineering.auckland.ac.nz/uoq/mengst-plastics)

#### Or contact:

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# Postgraduate study in Plastics



## Introduction

Plastics materials are lightweight and relatively inexpensive to manufacture, plus infinitely flexible in terms of manufacturing processes. They are corrosion resistant, fit for many purposes and are vital to many industries.

Use of plastics will continue to expand as the demand increases for higher performance materials which can be manufactured efficiently. Understanding these materials is crucial to scientists and engineers involved in the design and manufacture of high tech plastics components.



## Postgraduate Certificate in Engineering (Plastics) (PGCertEng in Plastics)

### Why apply for this programme?

The Postgraduate Certificate in Engineering (Plastics) provides vital theoretical and practical skills required by engineers using plastic materials for commercial applications.

It is a high level part-time programme designed for people who are working in industry. The teaching portion of each of the four courses is delivered as a week-long block, minimising time away from the company.

Further assignment-based course work is completed through the rest of each semester, generally within the company employing the student. This arrangement has proved remarkably effective and beneficial for both the student and company involved.

### Some comments from recent graduates:

“From the first assignment, this course has been directly applicable to my work. I’ve gone from having no knowledge of certain aspects (eg, UV degradation of polymers) to being referred to as the ‘expert’ in our office. While this is personally satisfying, my manager and I both feel very strongly that the knowledge gained in these courses has been of great value to my company.”

“The value of this programme has been hugely important to my role as a product development engineer at Fisher & Paykel Healthcare as it has given me a really good knowledge of polymer properties and their applications, as well as practical understanding of tools and polymer processing.”

“The value of this course has been immense. Gaining more product and processing knowledge has been invaluable in my role as I need to know a lot of different polymer products and the way they react when used in different processes.”

### Where will it take you?

This programme offers an excellent opportunity to add highly relevant and applicable skills to your CV.

You also have the option of continuing on to a Master of Engineering Studies in Plastics by reassigning the points gained in the PGCertEng in Plastics programme.

### Who should take this programme?

Graduate engineers and scientists, or other appropriately qualified technical people who wish to advance their careers in industries which design and manufacture products with plastic components.

Candidates without appropriate science or engineering qualifications but with significant relevant industry experience can apply for special admission.

### Outline

The programme is made up of four courses run sequentially over four semesters (two years part-time).

The teaching for each course is conducted in the second week of the semester as a five-day block. Attendees complete assignments in their own time over the remainder of the semester. These include a work-based project report.

### The four courses cover:

- Advanced Polymer Materials – understanding the structure, properties and processing inter-relationships of materials used in the plastics industry and how these impinge on material selection and processing.
- Processing of Plastics – understanding how materials used in plastics behave under processing conditions. This includes the effects of additives on processing and degradation and the major mixing and forming techniques.
- Plastics Materials Design – how commercial software is used to design products and tools. Fabrication techniques including 3D printing. Environmental/life cycle considerations.
- Selected Topics in Plastics Processing - knowledge of specialised topics and applications, such as fluoropolymers, silicones, film blowing, thermoforming, membranes and bioplastics.

